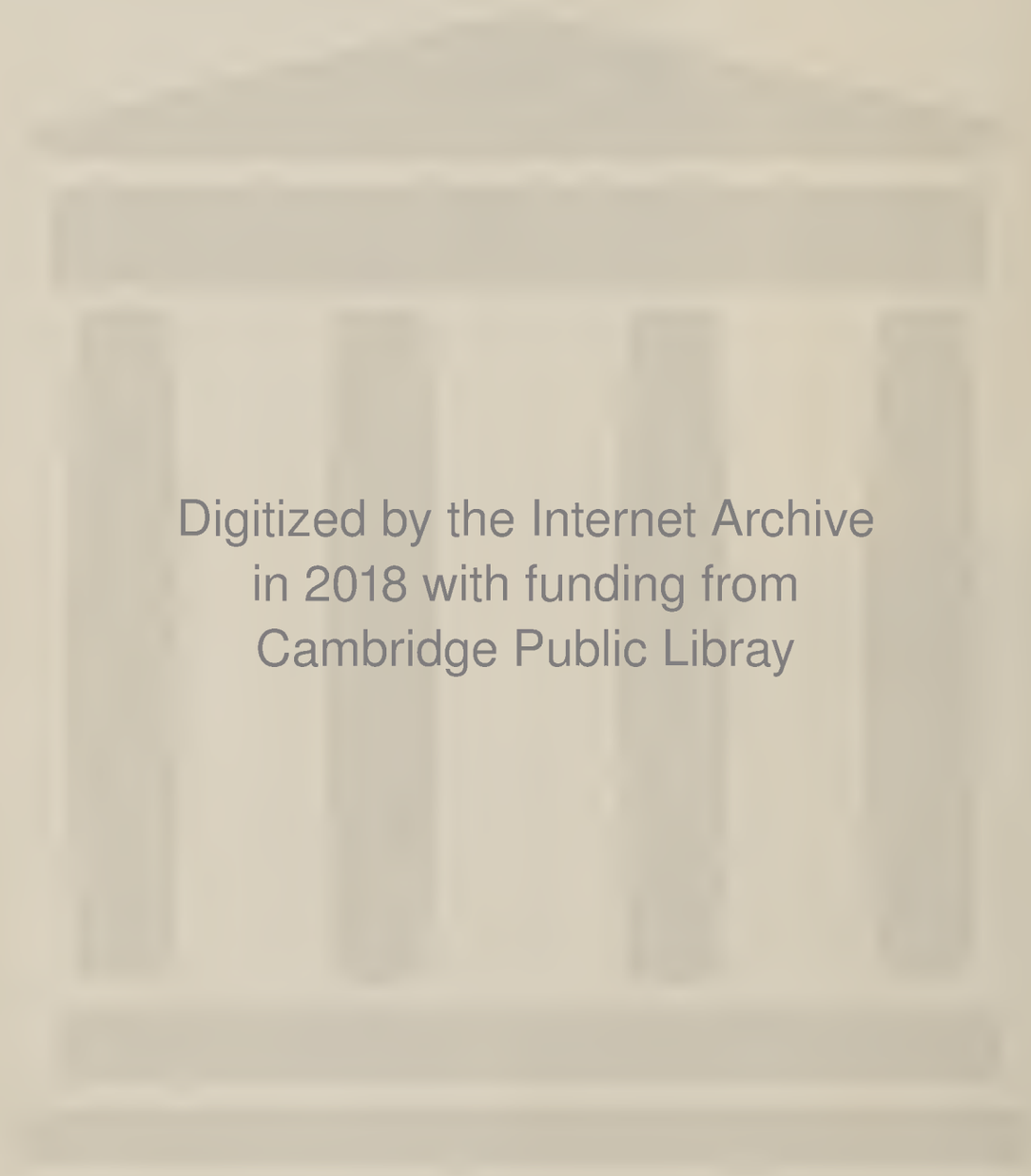

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City of Cambridge.

THE

MAYOR'S ADDRESS

AT THE

ORGANIZATION OF THE CITY GOVERNMENT,

JANUARY 5, 1891.

AND

THE ANNUAL REPORTS

MADE TO THE CITY COUNCIL

FOR THE YEAR 1890.

CAMBRIDGE:
HARVARD PRINTING COMPANY.
1891.

Published by order of the City Council.

ADDRESS

OF

HON. ALPHEUS B. ALGER,

MAYOR.

Gentlemen of the City Council:

We are assembled here today to assume the duties of the offices to which we have been respectively called by the suffrages of our fellow-citizens.

Having just taken upon ourselves a serious and solemn obligation "to faithfully and impartially discharge the duties" of such positions, we are now qualified and prepared to enter upon our great and important undertaking.

In our hands has been intrusted the maintenance of the honor, integrity and welfare of the city and its inhabitants, for the ensuing municipal year.

The management of the prudential affairs of the city, with its important and varied interests, will require, on the part of us all, during the entire year, calm and earnest deliberation, faithful and continued watchfulness, close and thoughtful study and research for such facts and information as will be useful and necessary for proper and intelligent action.

The City Government is a business corporation, and as such, should be conducted on business principles.

Its public officials are the useful and efficient instruments of local government; they are merely servants of its inhabitants, acting for a brief period in the capacity of trustees, in carrying on an economical and honest administration of their affairs in a manner not repugnant to the laws of the commonwealth and the ordinances of the city. They should be men of character and those best qualified to control and transact the municipal affairs. Their tenure of office should depend upon their record for faithful and efficient services rendered the city, rather than upon a change of administration.

The city is charged with the support of the public schools and library; for the relief of the poor; the laying out and repair of the public highways or streets; the preservation of peace and good order in its limits by the maintenance of a police department; the protection of the lives and property of its citizens from destruction by fire by providing a fire department; with supplying its citizens with pure water, and with the protection of the public health by building sewers, as well as other duties required by law.

For defraying these and all necessary and lawful charges, the city may, through its proper officials, levy and collect taxes.

To you, gentlemen, are intrusted the efficient, economical, and faithful management and performance of these obligations and duties of the city.

The taxpayers do not object to liberal appropriations

to meet all necessary demands of the different departments of the city, which will result in a better and more efficient service, and which will advance the prosperity and security of the citizens.

It is our duty, acting for them, to see that every dollar taken from the citizens by taxation shall be honestly expended, bringing in return, a corresponding benefit and value to the city.

The same thoughtfulness and good judgment should be exercised and displayed in the disposition of matters relating to the prosperity and future advancement of the city, as would be devoted by an individual to private interests.

The present financial policy of the city, keeping the expenses of the year strictly within its annual income, should be maintained and continued. No indebtedness for the payment of ordinary current expenses should be incurred.

In making the appropriations for the support of the government for the ensuing year, great care, economy and prudence should control our action.

The necessary expenses for the proper maintenance of the different departments must be provided for, and public improvements, which the wants and requirements of our large and growing city seem to demand, should alone be considered.

It must not be forgotten that recourse must always be had to taxation, to cover all expenditures. If expenses are enlarged, increased taxation necessarily follows, and the cost of city living is largely augmented. Excessive taxation establishes high prices, and causes

residents and manufacturing corporations to remove as far as possible from a city where it obtains.

Your efforts, gentlemen, should therefore be directed to transact the business of the city with such diligence, care and economy as to secure, if possible, a material reduction of the taxes, thus furnishing a motive and inducement to persons and manufacturing industries, seeking residences or locations, to be favorably attracted toward Cambridge.

The reports of the various city departments have been submitted to the last city council. They contain in detail the work performed by each department the past year, together with the recommendations of the head of each department and the present needs of such department.

These reports merit and demand your careful perusal, as much useful and interesting information is conveyed relative to the amount and character of the work done by the city the past year.

Gentlemen, permit me to briefly call your attention to the different city departments, their needs and desires, with such suggestions and recommendations as seem fitting and proper.

Your attention is first respectfully directed to the present financial condition of the city

FINANCES.

Receipts for the year	$2,364,374 36
Amount in City Treasury, Dec. 1, 1889	107,664 31
Total receipts	$2,472,038 67
Total expenditure for the year	2,416,089 61
Balance in City Treasury, Dec. 1, 1890	$55,949 06
Amount carried forward	$55,949 06

Amount brought forward			$55,949 06
From which deduct unexpended on bond account: —			
Harvard Bridge	$15,311 35		
New High School	1,000 30		
Extension and widening of Front Street	2,312 43		
Water Works construction— Fresh Pond and Stony Brook	13,780 13		
		$32,404 21	
And balance unexpended on account of contracts begun and not completed: —			
City Hall furnishings	$6,840 19		
New engine house	11,129 05	$17,969 24	$50,373 45
Leaving net balance in City Treasury, Dec. 1, 1890, of			$5,575 61
Gross city debt, Dec. 1, 1890			$2,044,000 00
Less amount in the city sinking fund			549,905 82
Net city debt			$1,494,094 18
Gross water debt		$1,771,500 00	
Less water loan sinking fund		765,754 67	
Net water debt			$1,005,745 33
Total city and water debt, net			$2,499,839 51

In addition to the above bonded indebtedness there are *contingent* liabilities of $225,000, made up as follows, viz: —

Contingent loan, being a city note to the trustees of the water loan sinking fund	$200,000 00	
Trust funds: —		
Dowse Institute fund	10,000 00	
Sanders temperance fund	10,000 00	
Daniel White charity fund	5,000 00	
		$225.000 00

FUNDED DEBT 1889 AND 1890 COMPARED.

	1889.	1890.
Gross city funded debt	$1,944,000 00	$2,044,000 00
Gross water funded debt	1,631,500 00	1,771,500 00
Gross funded debt	$3,575,500 00	$3,815,500 00
Less amount in both sinking funds	1,211,719 31	1,315,660 49
Net funded debt	$2,363,780 69	$2,499,839 51

Increase in 1890 of net funded debt, $136,058 82.

In the above comparison of years 1889 and 1890 it appears there has been an increase of $136,058.82 in the net funded debt. This increase is accounted for in the following manner:—

The city debt was increased as follows:—	
Part payment for construction of the new High School (10 year bonds)	$100,000 00
For construction of main sewers (20 year bonds)	15,000 00
On account of Harvard Bridge, Front Street expense, (30 year bonds)	5,000 00
	$120,000 00
The water debt was increased by the issue of 20 year bonds for the purchase of land on the borders of Fresh Pond	200,000 00
	$320,000 00

It will be observed that while the bonds issued amount to the above sum of $320,000, the net funded debt shows an actual increase of $136,058.82. This result is due to the operation of the sinking funds, increased by interest on the securities and the annual payments required by law; also to the fact that a small portion only of our bonded indebtedness matured and was paid the past year. $20,000 of the city debt matured and was paid from the city sinking fund, and $60,000 of the water debt matured and was paid from the water loan sinking fund.

Owing to the falling off in the rate of interest on the investments belonging to the water loan sinking fund, it will become necessary and advisable that the sinking fund requirements for the water loan debt this year should be increased to $3\frac{1}{2}$ per cent. on the amount of outstanding water bonds, as 3 per cent., which has heretofore been paid, is insufficient. This increase, I understand, has already been allowed on the outstanding city bonds.

The present year we shall be obliged to borrow $100,000 for the completion of the new High school house. The new enginehouse in Ward Four is paid for, or was provided for in the budget of 1889.

The new Ward Four schoolhouse was provided for in the tax levy of 1890 to the amount of about $40,000, and the balance, estimated at $35,000, to be paid for from the tax levy of 1891.

Our borrowing capacity (December 1, 1890,) for the current year, will be $301,927.32, made up as follows, viz:—

Average net valuation for 1888, 1889 and 1890	$63,840,859 90
2½ per cent. on same	$1,596,021 50
Less net funded city debt	1,494,094 18
Leaving a margin of	$101,927 32
To which is added, as exemption on account of Harvard Bridge	200,000 00
Borrowing limit for the year	$301,927 32

It is gratifying to learn that the value of the real and personal estate owned by the city, taken at a fair estimate, is more than sufficient to liquidate the total indebtedness.

STREETS.

The appropriations for the Street Department—Maintenance, including building, repairing and cleaning streets, and the collection of ashes were	$110,751 57
Expenditures	110,650 77
Balance Unexpended	$100 80

From a careful inspection of the expenditures, it appears that only one-half of the entire appropriation ($55,000 in amount) was available for actual construction and repairs; the remainder of the appropriation was expended for the collection of ashes, maintenance of

the stables (including care of horses and food), and repairs on stables. removal of snow and ice, renewal of necessary tools and supplies, and the purchase of a steam roller.

Our citizens are too apt to complain and severely criticise the management of this department for the poor condition of the streets,—a state of affairs directly attributable to the inadequate and insufficient appropriations. When we take into consideration the comparatively small amount expended the past year to keep nearly one hundred miles of streets in proper repair, it really seems wonderful to find our streets at the present time in so good condition.

The character of our streets, with their generally uniform flatness, and, in many instances, poor foundations renders a large expenditure of money absolutely necessary to keep them in proper order. In addition to these natural defects, our streets have practically become the main thoroughfares to Boston for the travel and heavy teaming of the adjoining cities and towns.

The principal streets should be paved or heavily macadamized to place them in proper and safe condition. A certain amount of paving has been done each year on some one or more of our principal streets, and a special appropriation has annually been made for that purpose; but many years will pass before some of our main streets can be paved, an improvement imperatively required at the present time, unless larger appropriations for paving are made, and the present policy of patching is materially changed.

Large amounts of money are annually expended in

patching and repairing the same main streets. A substantial saving to the city would result if such streets could at once be paved. I would recommend in the interest of true economy that an appropriation of one hundred thousand dollars at least be made the present year for paving such parts of our main streets as the City Council may select, such appropriation to be met by the issue of City Bonds. This policy of borrowing money for such a purpose has been adopted by all the larger cities of the country. Bridge Street has been paved the past year at an expense of nearly $18,000. The Superintendent of Streets recommends the paving of Cambridge Street this year from the Grand Junction Railroad crossing to Columbia Street. This is one of the most heavily travelled thoroughfares of the city.

I heartily endorse his recommendation, and, should the loan of $100,000 for paving be authorized, I would advise that Cambridge Street be paved this year, from the railroad crossing to Inman Square. Less expensive schoolhouses should hereafter be built, and larger appropriations made for putting our streets in a better condition. Such a course would appear to be dictated by sound business judgment.

The following named streets should be paved on the sections mentioned: Cambridge Street from railroad crossing to Inman Square, including that square; Broadway from railroad crossing to Prospect Street; Western Avenue, its entire length, including Central Square; Main Street from Central Square to Harvard Street; Prospect, Columbia, Winsor and Portland Streets, respectively from Main Street to Cambridge Street; North Avenue from

Garden Street to Harvard Square; Brattle Square and Craigie Street.

The Superintendent urges the purchase of a good gravel bank by the city. The want of good gravel is seriously felt each year, as the department at times is forced to use material of an inferior quality in top-dressing and grading, hardly suitable for the required purpose. The city should purchase a gravel bank, if one can be obtained at a reasonable price, and in an accessible and convenient locality.

The Superintendent recommends the laying of more sidewalks and edgestones, as, in his opinion, the streets where such sidewalks already exist can be kept in better repair at less expense.

The petitioners, applying for sidewalks and edgestones, are compelled to pay the cost of materials used in construction. He requests a larger appropriation to perform this work and to lay more street crossings, conveniences greatly needed, and to put in a larger number of catch-basins. In his opinion, better and more satisfactory service can be obtained if the street watering were done by the city teams, under the direction of a foreman, rather than by contractors. Several new watering carts will be required the present year.

To all of his recommendations your careful attention is respectfully directed, as larger appropriations will undoubtedly be necessary.

SCHOOLS.

Our citizens can well congratulate and pride themselves upon the admirable condition and excellent standard of the public schools of Cambridge.

The policy and principle of the commonwealth regarding the education of the children of her people, are earnestly and consistently pursued and carried out in Cambridge under the management of the School Committee.

Attendance at school is made compulsory to the youth of both sexes up to a certain age, and, beyond that period, an opportunity for the highest possible education is afforded and offered to all who choose to seek it. The public school is firmly established, and, in the future as in the past, will be sustained by an intelligent and zealous public sentiment.

It cannot fail to become a more important element in our social and business life, as its field of influence is from time to time extended.

The popular sense of its value and necessity is constantly strengthened.

Our city expends a large amount of its yearly revenue in support of the public schools.

The school committee, in its annual report to the City Council, will detail the work accomplished in the schools the past year, and will make known their needs and requirements for the present year.

I am confident that you will carefully consider these requests, and, in response thereto, make sufficient and suitable appropriations to maintain our schools in their present high degree of excellence.

The school committee, while an independent board, shares with each department of the city the same responsibility to our citizens and tax-payers.

When appropriations for the support of the schools

are once made and the amount ascertained, it should be the imperative duty of the school committee to keep the expenses of the school department strictly within the limits of such appropriation:

SCHOOL STATISTICS FOR 1890.

Number of pupils on the first of December	11,079
Number of teachers,	263
Cost of the day schools, not including expenditures for new school houses	$241,980 84
Increase over last year	$12,559 53
Cost of the schools per pupil,	$23 98
Increase over last year	95

The schoolhouse now used by the English High School should be thoroughly repaired, and an entire change made in the method of heating and ventilating the building before it is occupied by the Latin School. The city again acknowledges her grateful appreciation to Mr. Frederick H. Rindge of Los Angeles, Cal., formerly of Cambridge, for his recent noble and generous offer to maintain at his own expense for an indefinite period of years the Manual Training School, which offer was accepted for the city by the last City Council.

The city trusts that he may long be spared to experience the joy and pleasure and witness the truth of the injunction, "It is more blessed to give than to receive."

PUBLIC LIBRARY.

The beneficial effects of our Public Library upon our community cannot be overestimated. Its books furnish amusement and instruction to both old and young. Its educational and moral work is almost incalculable.

The number of our citizens availing themselves of its privileges is constantly increasing.

Any reasonable requests of the Trustees for its maintenance, and for the extension of its advantages among a large number of our citizens, should receive your warm and careful attention.

WATER WORKS.

In its twenty-sixth annual report, which includes those of the Superintendent, Registrar and Engineer, the Water Board has presented a most elaborate and interesting statement of the present condition of this important department.

From this report it appears that the total cost of the water works to Nov. 30, 1890, amounts to $2,867,734.83.

Whole amount of water bonds issued	$2,659,900 00
Amount paid from the water debt sinking fund	888,400 00
Leaving unpaid water bonds	$1,771,500 00
From this deduct the present value of the water debt sinking fund, as per trustees' account	765,754 67
Leaving the amount of water bonds yet to be provided for by the sinking fund in the future	$1,005,745 33
The receipts from water rates, fines. etc., amounted to	$239,735 48
The expenditures were as follows: —	
For general construction account	$46,987 15
Maintenance account	40,037 70
Supply account	5,625 24
Interest on water bonds	82,195 00
Payments to the sinking fund (being 3 per cent. on $1,631,500)	48,945 00
Surplus of 1890 carried to the sinking fund	15,945 39
	$239,735 48

COMPARATIVE STATEMENT IN RECEIPTS.

Water rates for the year 1890	$231,116 62
" " " " " 1889	221,124 70
Showing excess of water rates in 1890	$9,991 92

In an examination of the detailed expenditures appears the charge for "general construction account," $46,987.15.

An honest difference of opinion seems to exist whether the payment of this account should not have been met by the issue of bonds, rather than charged to the receipts from water rates. In case of payment by the issue of bonds, the only expense chargeable against the receipts would be interest on such bonds and the necessary sum required by the sinking fund for redemption of these bonds at maturity, a very small amount compared to the large sum directly taken this past year from the receipts.

In the Stony Brook additional water supply account, which was paid for by bonds, are found several items for general expenses amounting to nearly $550, which appears to me should more properly have been charged to maintenance.

I would refer this subject to your careful attention and considerate deliberation, and would respectfully recommend that the City Council clearly and concisely define the full scope and meaning of the words "construction" and "maintenance," that the character and kind of work coming under each head may be accurately described.

Taking into consideration the great surplus of nearly $16,000, the past year, the possibility that certain large expenditures for construction may in the future be provided for by the issuing of bonds, and the constant annual increase in receipts, it would appear that a substantial reduction in the water rates can safely be made

to our water consumers. The preferable and more equitable manner in effecting such reduction would seem to be by a careful revision of the schedules of water rates, rather than by a ten per cent. discount on the bills of consumers, paying during the month of May, as suggested by the Water Board. The latter method is apparently more in the interest of wealthy citizens than of those of moderate means, who would be benefited by a reduction more than by a discount.

Settlements have been made the past year with all the owners, excepting three, for land taken around the borders of Fresh Pond.

The Water Board has purchased thirteen acres of land in Belmont, which purchase completes all the land necessary for the protection of our water supply; and also furnishes material required for grading and filling the low places around the borders of the reservoir.

The city can well congratulate herself upon the possession of such an excellent and valuable water supply, capable of meeting all demands upon it for years to come. The requests and recommendations of the Water Board relating to the necessities of that department for this year cannot fail to receive your careful consideration. I would recommend to each member of the City Council the reading of this complete and comprehensive report of the Water Board, which contains a full account of the work done on the entire system.

POLICE DEPARTMENT.

The responsible duty of preserving the peace, protecting the lives, safety and property of our citizens against

those criminally inclined or viciously disposed, is intrusted to the faithful members of our police department.

From personal observation and from the friendly and favorable commendation of county and other officials, with whom the members of our police department have been brought into contact in the discharge of their public duties, I believe I am justified in the statement that our present police force is composed of men of ability, integrity and sobriety, who are not excelled by the members of the police force of any other city in the Commonwealth. The management of this department for the past year has been entirely satisfactory.

The present force consists of a chief, three captains, ten sergeants and sixty-eight patrolmen. The force was increased the past year by the appointment of three men.

By the recent sudden death of Patrolman Amos Jones of Station 3, the department is deprived of the services of one of its most efficient and faithful officers.

Appointed to the force in 1869, he had rendered at the time of his decease, twenty-one years of honorable service to the city.

The whole number of arrests the past year was 1743 (1584 males, 189 females; 1423 adults, 350 minors, 222 non-residents.)

The appropriations and estimated revenue for the department .	$96,285 72
Total cost of the department for the year	94,872 37
Leaving balance unexpended	$1,413 35

The past year the Police Signal System of the Gamewell Company was adopted and thirty signal boxes placed throughout Police District Two, at an expense of $5,052.50. It has been in working order since October

1st, 1890, and to the present time, in connection with the patrol wagon, has given complete satisfaction.

The operation of this system cannot fail to render the services of our police force more efficient and reliable.

I heartily coincide with the recommendation of the Chief of Police that the Signal System should be extended throughout the entire city the present year But, if it should be deemed advisable to adopt the system in one Police District each year, I would earn estly recommend that it be introduced in Police District Three the present year. The Chief of Police calls the attention of the City Council to the inadequate accommodations furnished the police of the Third District. The remodeling of the Baptist church in close proximity to the building in which the police force of that district is located, renders the burning of gas in the captain's office a necessity during the whole day. The building on Fourth Street, East Cambridge, is in part occupied by Engine Co. No. 3 of the Fire Department, and the Ward Room is also therein located. Both the police and fire departments occupying this building require larger and more commodious quarters to properly and efficiently perform the duties assigned and expected of them-

I would recommend that the city acquire by purchase at an early day a sufficient lot of land in Ward 3, suitably and conveniently located, for a building adequate to the need of Fire Engine Co. No. 3.

The old building should be put in proper condition for the occupancy of the Police Department of that district.

The question whether licenses for the sale of intoxicating liquors should be granted in our city for the present year, having been decided in the negative by a large majority of the legal votes cast at the last municipal election, the laws applicable to the enforcement of this policy must be observed and respected.

Personal and individual opinion as to the advisability of the continuation of a no-license policy now becomes immaterial and ceases to have value or weight.

As the chief magistrate of the city during the present year, I shall exert my earnest and utmost endeavor to impartially and vigorously enforce and execute the no-license laws, together with all laws of the Commonwealth and ordinances of the city.

The co-operation of every member of the police force, will not only be expected but his zealous, fearless and impartial efforts to fully carry out the strictest enforcement of the no-license laws demanded.

What to do with old and faithful policemen, who have become worn out in the service of the city, is a serious question, because the time is not far distant when many dismissals will be necessary to keep the force composed of live, active, and able-bodied men.

Many of our citizens object to the discharge of patrolmen who have served the city long and faithfully. Two of the force are now incapacitated from labor, one by extreme old age, the other by the ravages of disease.

The suggestion of the Chief of Police that the City Council consider the advisability of taking some action in the matter of pensioning old and faithful officers is a

timely one, and I earnestly recommend the subject to your careful and serious deliberation.

The Chief also recommends an increase to the force of seven men — three for the new Harvard bridge, three for routes now covered by the officers on adjoining routes and by a special officer, and one for the Belmont district. Since the report of the Chief has been submitted, the force has been increased by the addition of two men; consequently his recommendation becomes modified to that extent.

From the somewhat limited examination I have been enabled to give this recommendation, I consider that this increase will be necessary to properly protect certain parts of the city which now appear to be inadequately covered. This matter will, however, receive your practical action.

FIRE DEPARTMENT.

The annual report of the Chief Engineer gives a full and concise statement of the condition of this department and the work done during the past year, with additional interesting information. The department the past year has promptly responded to all calls upon it and has rendered efficient and faithful service. The force at present consists of a chief engineer, three assistant engineers and other officers (including fire alarm employes) to the number of ninety-nine.

Your attention is respectfully directed to the several suggestions of the Chief Engineer relative to the purchase of new hose; the exchange of some of the old horses for younger ones; the purchase of a striker to be placed in connection with the bell in the tower

of City Hall; the transfer of the striker from the tower of Central Square Baptist Church to Engine House No. 2, on Main Street; perfecting the drainage system in Engine House No. 2, on Main Street; the reflooring of steamer room in Engine House No. 1, and the purchase of additional signal boxes when needed. The Chief also calls attention to the need of a building in which to store spare apparatus.

Appropriation for the past year	$56,600 00
Receipts	264 47
	$56,864 47
Expenditures	56,501 50
Balance unexpended	$362 97

There are several recommendations which I make, believing that if they are adopted and carried out the efficiency of the fire department will be materially increased.

The fire alarm telegraph system is divided into four circuits, covering the entire city. In case of any accidental breakage of the wire of any one of these circuits, the whole of that circuit is immediately rendered useless, and one quarter of the city left unprotected. As the city already owns a ten-circuit repeater, which can be made available, I would respectfully urge the importance of increasing the number of circuits to ten, thus lessening the danger, in case any section failed to operate by reason of accident.

I respectfully recommend and advise the abolishment of the offices of the three call assistant engineers and the appointment of one permanent assistant engineer, who, under the direction of the Chief, shall devote his entire time and attention to the business

of the department. The present call assistant engineers pursue their usual vocations, and do not give their entire time to the department. Their combined salaries, with a small additional amount, would be sufficient compensation for such a permanent officer.

I would earnestly recommend the appointment of one permanent man in each steamer company, who should not exceed the age of thirty-five years, and who should have some knowledge of mechanical work; such men to be ranked as assistant enginemen or firemen, and receive instruction in the care and management of engines. These men could also serve as substitutes for regular men absent on vacations. The office of relief engineer could then be abolished. The appointment of such men would not necessarily increase the number of members in the companies.

I have already alluded under the head of the Police Department, to the immediate necessity of a new engine-house in Ward Three, that better and more adequate quarters may be provided for the police force, as well as the fire company of the Third district.

Such an engine house might accommodate the spare apparatus.

A steamer or chemical engine should soon be provided, to be located at or near Lake View Avenue in Ward One, for the protection of that neighborhood and the Belmont district.

BRIDGES — WEST BOSTON, CANAL (CRAGIE'S) AND PRISON POINT.

Commissioner Marvin reports that slight and ordinary repairs were made the past year on West Boston and

Prison Point Bridges, and more substantial repairs made on the Canal or Craigie's Bridge.

The present year the customary repairs will suffice to keep the Canal and Prison Point Bridges in good and safe condition, but to maintain West Boston Bridge in a proper state for heavy use and travel, extensive repairs will be necessary on the southerly side of the bridge from the draw to the Cambridge abutment.

The Cambridge Electric Light Company has furnished electric lights for the Cambridge side of West Boston bridge, as well as Craigie's bridge, at a lower rate than formerly charged.

Amount of revenue received for dockage, rent, etc.	$605 40

ELECTRIC LIGHT AND STREET LIGHTING.

The report of the Superintendent of Lamps shows amount appropriated for the department to be	$51,575 80
Expenditures	49,269 02
Balance unexpended	$2,306 78
The cost per lamp (all expenses) in arc lighting was	$181 44
The cost per lamp (all expenses) for incandescent lighting . .	31 10
The cost per lamp (including all expenses) for gas	29 71
The cost per lamp (including all expenses) for oil lighting . .	12 74
Whole number of lamps in use	1133

The lighting of streets at night was formerly regarded as a luxury; it has now become one of the necessities of city life.

The city should be uniformly lighted for the pleasure, convenience and safety of its citizens.

I would recommend an increase of the number of lamps where public necessity demands.

ENGINEERING AND SEWER DEPARTMENTS.

The amount of work performed by these departments is shown in the report of the City Engineer.

ENGINEERING DEPARTMENT.

Appropriation for engineering	$9,100 00
Expenditures of department	9,045 90
Balance unexpended	$54 10

BRIDGES.

The work of widening the passage-way for vessels at the Boylston Street Bridge is so far advanced that travel is again resumed, and the work will be finished at an early date.

The widening of the draw of Brookline Bridge is well under way.

The Cambridge side of the River Street Bridge is being rebuilt and the draw will be widened on the Boston side; an early opening of the bridge for travel now seems assured. The Sixth Street Bridge has been rebuilt and is now in good condition.

On account of the fact that three of the bridges over Charles River were closed to travel, the matter of widening the draw of the Western Avenue Bridge was deferred to this year, when the necessary widening of the draw will be made.

The culvert of the North Avenue Bridge is in bad condition. The engineer recommends that this bridge should be rebuilt with proper side walls and top, and made the full width of the avenue.

All the bridges are generally in good condition.

SEWERS.

During the year $2\frac{372}{1000}$ miles of sewers have been built, making the total number of miles in the city $86\frac{163}{1000}$.

The main trunk sewer for the Belmont district, begun in October, 1886, is now complete.

The flats about the mouth of the Bridge Street sewer have been flushed and dredged as usual. The total cost of this work was $2,347.63, of which five-ninths was paid by the City of Somerville and four-ninths by Cambridge.

The sewer running through Eliot, Brattle and Harvard Squares has not yet been completed, on account of the inclemency of the season, but will be finished early in the spring.

METROPOLITAN SEWERAGE SYSTEM.

The work of construction of this great system was begun the past year under the direction of the commissioners appointed by the Governor of Massachusetts.

Contracts have already been made for the construction, on Deer Island and in Winthrop, of $4\frac{715}{1000}$ miles of the "North Metropolitan Sewer," with which Cambridge will connect, and the work will be pressed the present year.

Two or three years may elapse before Cambridge will be directly benefited.

The appointment of Commissioners to apportion the expense of the cost of construction and maintenance of this system is now being acted upon by the Supreme Court.

Appropriations for construction "Belmont sewer system," "sundry sewers," and maintenance	$65,000 00
Expended for construction "Belmont sewer system," "sundry sewers," and maintenance	50,783 33
Balance unexpended sundry sewers account ($8,087.07) and maintenance account ($6,129.60)	$14,216 67

All the sewers have, under the supervision of the City Engineer, been constructed by day labor.

The work of lowering the culverts on the line of Alewife Brook to draw off the high water in the brook and on adjacent meadows, is now practically completed. To derive the benefit of the work already done, the Engineer recommends the early dredging of the brook.

HARVARD BRIDGE.

This structure is practically completed, but little additional work being requisite to prepare the bridge for the use of the public. The controversy pending between the City of Boston, Boston and Albany Railroad and Cambridge, as to the manner of crossing the tracks of the Boston and Albany branch railroad, on the Front street extension, not yet having been decided by the Supreme Court, the bridge and the avenue have not been opened for travel. An opinion of the court, favorable to Cambridge, is daily expected. If the decision is adverse to the position taken by Cambridge, I shall advise an appeal to the Legislature for necessary relief. Let us trust that the end of this controversy is near at hand, and that the citizens of Boston and Cambridge may be permitted at an early day to enjoy the privileges of this great and necessary improvement.

NEW CITY CHARTER.

A draft for a new city charter was submitted to the last city council and thoroughly discussed by its members. Many important and valuable changes were suggested, especially the one proposing to clothe the Mayor with more power.

The tendency of legislation the past few years in granting new charters and amending old ones has

invariably been in the direction of conferring more authority upon the Mayor of a city.

I believe this to be a move in the interest of good government.

The Mayor should be given the substantial power of appointment and removal of city officials.

The Mayor is usually held responsible for the good conduct of the city government.

Unless he is clothed with sufficient power to remove incompetent and unfaithful officials, no true responsibility for malfeasance and misconduct can be attached to him, if an official nominally subordinate, but really independent fails to perform his duty.

City officials should be directly responsible to the Mayor; they would then retain their positions by merit alone, as no honest and fair-minded Mayor would make removals except for cause.

ALMSHOUSE AND THE POOR.

Our city is charged with the relief of the poor, who, having a legal settlement, claim and receive support at the public expense.

Our Almshouse located in the northerly part of the city is in charge of a superintendent and matron who have labored earnestly for the welfare of the inmates.

The sanitary surroundings are perhaps not all that could be desired, but it is hoped that some relief will be afforded in the near future by the Metropolitan Sewerage System. The general health of the inmates has been good notwithstanding the unfavorable environs.

These unfortunates will ever meet with the sympathy and assistance of our generous community.

Let us ever be so considerate of the needs, so kind in treatment and so mindful of the misfortunes of the poor, that the mantle of charity may fall so lightly upon them, that in its gentleness it shall prove a blessing and not a cross.

The receipts for the year 1890 from Almshouse, Farm, Ledge and House offal reach the sum of $18,649.48, an increase of $1,177.62 over those of 1889.

CAMBRIDGE CEMETERY.

The Commissioners report that its affairs are in a satisfactory condition and that the usual good work has been done the present year under the supervision of the faithful superintendent.

Appropriations for last year	$16,000 00
Surplus revenues	3,490 77
Total receipts	$19,490 77
Expenditures	16,021 96
Balance unexpended	$3,468 81

A few years ago the City Council transferred the care and management of the old burial ground near Harvard Square, to the Board of Cemetery Commissioners. This ancient burial ground has received considerable attention and many objectionable features surrounding it have been removed since it has been under their charge.

The Commissioners recommend that an iron fence be built around this resting-place of so many of our illustrious and honored dead.

I heartily endorse their recommendation, and trust that

their request for an increased appropriation for the present year for this purpose and for the general care of the cemeteries will meet with your approval.

ANOTHER NEW BRIDGE.

It may not prove exactly opportune at the present time to recommend the building of a new bridge across Charles River by Boston and Cambridge, considering the difficulties now attending the opening of the Harvard Bridge; but a suggestion of a public improvement is ever advisable.

It appears to me that a better and more direct route could be opened between Cambridge, Brookline, Chestnut Hill Reservoir and the Brighton District, which would be a great public benefit and convenience.

By the building of a bridge from Magazine street extended to Captain's Island on the Cambridge side, to a point a few hundred feet from Beacon Street on the Brighton District side, such a route could be obtained. The land on the Brighton District side is high and uncovered by buildings, and an avenue to Beacon Street could be made without much grading. This avenue would meet Beacon Street in the vicinity of Commonwealth Avenue, which leads directly to Chestnut Hill Reservoir.

I would suggest that this matter be considered to ascertain the benefits to be derived and the probable cost of such an improvement.

PUBLIC PARKS.

Public parks are of great benefit to a city. Cambridge has as yet no park system, but it is believed

that the improvements soon to be made along the banks of Charles River and the acquisition of land about the reservoir will in part meet our needs in this direction.

It seems to me that the city can do nothing wiser than to acquire lands about Fresh Pond as rapidly as possible for park purposes, a policy which will inure to its future growth and prosperity.

I call your attention to these matters, gentlemen, not with the expectation that every recommendation can be adopted, but that we may be apprised of our needs.

I think we should first give attention to those matters which are absolute necessities, and only turn from them when they have received our most careful and exhaustive study and action.

BATH HOUSE.

The residents of Ward Three have been accustomed for several years to use the Boston bath-house, located on the Boston side of Craigie's bridge, but the past year this privilege was denied them. A public bath-house is greatly needed in Ward Three. I would respectfully request your careful attention to this subject.

Gentlemen of the City Council: It will be our privilege to occupy this beautiful and convenient building during the current year. Our acts will be carefully scanned. As the first city government to be inaugurated in this new City Hall, let us by our

zealous and active interest, and our conscientious discharge of duties, strive untiringly to make memorable in the history of the city this year's administration.

Since man is weak, let us in our need for greater wisdom and in our desire for continued prosperity look to Him who gives so freely of His love and so bountifully bestows His blessings. Let us, too, keep in sight the beautiful proverb, "When the righteous are in authority, the people rejoice: but when the wicked beareth rule, the people mourn."

ANNUAL REPORT

OF THE

AUDITOR OF ACCOUNTS.

CITY OF CAMBRIDGE,
AUDITOR'S OFFICE, Dec. 1, 1890.

To the Honorable City Council:—

GENTLEMEN: In conformity with the requirements of the City Ordinances, the undersigned herewith presents the forty-fourth Annual Report of the Receipts and Expenditures of the City of Cambridge for the year ending Nov. 30, 1890, exhibiting the same as classified in the several department accounts; also a statement of the funded and temporary loans, the rates of interest thereon, together with such other information as may possess general interest.

Respectfully submitted,

HARRY T. UPHAM,
Auditor.

Balance in the treasury November 30, 1889		$107,664 31
Receipts from all sources from Dec. 1, 1889, to Nov. 30, 1890 (both included) were as follows:—		
From City Departments . . .	$123,172 86	
Water Department	258,611 42	
Betterments (extension and widening of Front street) . .	326 63	
Cemetery Fund, amount (received for "perpetual care of lots") .	4,118 70	
Commissioners of Sinking Funds (for payment of debt) . . .	20,000 00	
Sale of City lands	2,250 00	
Amounts carried forward . . .	$498,479 61	$107,664 31

Amounts brought forward . .		$408,479 61	$107,664 31
Sales of Bonds:—			
On City Accounts	$120,000 00		
On Water Accounts	200,000 00		
		320,000 00	
Temporary loans in anticipations taxes of 1890		425,000 00	
Taxes		1,081,207 68	
Tax, Corporation		50,898 34	
Tax, National Bank		17,563 57	
Tax, Lien		14 60	
Tax, Sale Surplus		1,210 56	
Trustees of Sinking Fund of Water Works		60,000 00	
Total Receipts . . .			$2,364,374 36
			$2,472,038 67
The Payments have been as follows:—			
For City Departments . . .		$1,318,462 15	
Water Department . . .		456,905 76	
Abatements, Taxes . . .		20,839 42	
Cemetery Fund (invested) .		4,118 70	
City Debt:—			
Funded Loan .	$20,000 00		
Temporary Loan	425,000 00		
Water Loan .	60,000 00		
		$505,000 00	
For Tax, Corporation		$ 31 68	
Tax, County		49,851 13	
Tax, National Bank . . .		6,423 22	
Tax, State		54,180 00	
Tax, Sale surplus		277 55	
Total Payments . . .			$2,416,089 61
Balance in the Treasury Nov. 30, 1890			$55,949 06

Amount brought forward		$55,949 06
The balance in the Treasury is subject to drafts, as follows:—		
Bond accounts:		
Harvard Bridge	$15,311 35	
New High School	1,000 30	
Street Department, extension and widening of Front St.	2,312 43	
Water Works, Fresh Pond Land and Stony Brook additional supply	13,780 13	
		$32,404 21
Contracts:—		
City Hall Furnishings . . .	$6,840 19	
New Engine-House	11,129 05	
		$17,969 24
		$50,373 45
Leaving a net balance of . .		5,575 61
		$55,949 06

The Payments considered extraordinary and not included in the annual estimates of expenses, were as follows:—			
Extension and widening of streets,			
Brattle Street .	$275 00		
Front Street . .	9,200 00		
Winsor Street .	2,200 00		
		$11,675 00	
Furnishing the New City Hall		$3,160 00	
Furnishing and finishing New Putnam School House . .		2,000 00	
Interest on High School Loan .		1,275 00	
Lowering Culverts at Alewife Brook		2,000 00	
Amounts carried forward . .		$20,110 00	$55,949 00

Amounts brought forward . . .	$20,110 00	$55,949 00
Printing the Revised Ordinances of 1889	600 00	
Repairs on Rifle Range . . .	640 00	
Soldiers' Aid	3,000 00	
Steam Roller for the Street Department	4,000 00	
		$28,350 00

All of which were met by the transfer of unexpended balances, with the exception of the extension and widening of Front Street, for which a registered bond for $5,000 was issued.

There has been an addition to the City Funded Debt during the year of $120,000.00, caused by the issue of coupon and registered bonds as follows :—

Bridge Loan (registered), dated Nov. 1, 1890, payable in thirty years, at an annual interest of four per cent. (Extension and widening of Front Street as an Avenue to the Harvard Bridge) . .	$5,000 00
School-House Loan (coupon) dated May 1, 1890, payable in ten years, at an annual interest of four per cent. (New High School-House)	100,000 00
School Loan (registered) dated May 1, 1890, payable in twenty years, at an annual interest of four per cent. (construction of sundry sewers) . . .	15,000 00
	$120,000 00
Of the City Fund Debt, there have matured during the year City Loan Bonds, amounting to . . .	20,000 00
Increase in City Funded Debt	$100,000 00

There has been an addition to the Water Debt of the City during the year of $200,000.00, caused by the issue of coupon bonds, payable in twenty years, at an annual interest of four per cent. (Fresh Pond Land)	$200,000 00
Of the Water Debt of the City, there have matured during the year, bonds amounting to .	$60,000 00
Increase in Water Debt	$140,000 00

The following is a statement of the temporary loans negotiated during the year and the rates of interest on the same:—

City Notes:—

Jan. 15, 1890,	$100,000	int.	$3\frac{1}{2}$	per	cent,	payable	Oct.	11,	1890
Feb. 15, "	50,000	"	$3\frac{7}{8}$	"	"	"	"	11,	"
Mch. 12, "	50,000	"	4	"	"	"	"	11,	"
Apr. 5, "	50,000	"	$3\frac{3}{4}$	"	"	"	"	11,	"
June 27, "	50,000	"	$4\frac{1}{8}$	"	"	"	"	13,	"
June 27, "	50,000	"	$4\frac{1}{4}$	"	"	"	"	13,	"
Aug. 29, "	75,000	"	$5\frac{1}{2}$	"	"	"	"	13,	"
	$425,000								

All of which were paid at maturity.

Balance Sheet, December 1, 1890.

Titles of Accounts.	Dr.	Cr.
Betterments	$27,910 70	
City Debt (Contingent)		$200,000 00
City Lands	12,362 59	
City of Cambridge	2,357,961 27	
City Treasury	55,949 06	
Commissioners of Sinking Funds	549,905 82	
Daniel White Charity Fund		5,000 00
Dowse Institute Fund		10,000 00
Loan, Cambridge Cemetery		65,000 00
Loan, City		150,000 00
Loan, City Hall Land		83,000 00
Loan, Harvard Bridge		330,000 00
Loan, High School-House		100,000 00
Loan, Land		10,000 00
Loan, Municipal		200,000 00
Loan, Paving		255,000 00
Loan, Sewer		716,000 00
Loan, Street		13,000 00
Loan, Street Widening		122,000 00
Loan, Water		1,771,500 00
Notes, Receivable	175 00	
Sanders Temperance Fund		10,000 00
Surrendered Estates	76,239 99	
Taxes, 1885	9,176 35	
Taxes, 1886	9,161 33	
Taxes, 1887	10,177 70	
Taxes, 1888	10,567 50	
Taxes, 1889	16,313 70	
Taxes, 1890	101,747 08	
Tax, Liens	17,113 44	
Tax, Sale Surplus		991 73
Trustees of Cemetery Fund	20,975 53	
Trustees of Sinking Funds of Water Works	765,754 67	
	$4,041,491 73	4,041,491 73

THE FUNDED CITY DEBT.

Following is a statement of the total Funded Debt of the City, with the dates of maturity and rates of interest thereon: —

Bridge Loan.

Due Oct. 1, 1917,	int.	4	per cent.,	30 yrs.	$10,000	
July 1, 1918,	"	4	"	30 "	100,000	
Sept. 1, 1918,	"	4	"	30 "	100,000	
Mch. 1, 1919,	"	4	"	30 "	115,000	
Nov. 1, 1920,	"	4	"	30 "	5,000	
						$330,000 00

City Loan.

Due Jan. 1, 1893,	int.	5	per cent.,	30 yrs.	. . .	$150,000 00

Land Loan.

Due July 1, 1893,	int.	6	per cent.,	20 yrs.	$10,000	
Aug. 1, 1898,	"	4	"	10 "	83,000	
						$93,000 00

Paving Loan.

Due July 1, 1893,	int.	6	per cent.,	20 yrs.	$100,000	
July 1, 1894,	"	6	"	20 "	130,000	
July 1, 1895,	"	6	"	20 "	25,000	
						$255,000 00

School-House Loan.

Due May 1, 1900,	int	4	per cent.,	10 yrs.	. . .	$100,000 00

Sewer Loan.

Due Oct. 1, 1895,	int.	6	per cent.,	20 yrs.	$20,000	
July 1, 1896,	"	6	"	20 "	29,000	
July 1, 1903,	"	6	"	30 "	136,000	
July 1, 1904,	"	6	"	30 "	295,000	
July 1, 1905,	"	6	"	30 "	144,000	
Nov. 1, 1896,	"	$3\frac{1}{2}$	"	10 "	25,000	
Nov. 1, 1907,	"	4	"	20 "	30,000	
Nov. 1, 1909,	"	4	"	20 "	22,000	
May 1, 1910,	"	4	"	20 "	15,000	
						$716,000 00

Street Loan.

Due July 1, 1893,	int.	6	per cent.,	20 yrs.	. .	$13,000 00
Amount carried forward					. . . . .	$1,657,000 00

Amount brought forward							$1,657,000 00
Street Widening Loan.							
Due Nov. 1, 1899, int. 4 per cent.,				10	yrs.	$8,000	
July 1, 1903,	"	6	"	30	"	10,000	
July 1, 1904,	"	6	"	30	"	90,000	
July 1, 1905,	"	6	"	30	"	14,000	
							$122,000 00
Municipal Loan.							
Due April 1, 1895, int. 4 per cent., 10 yrs. . . .							$200,000 00
Cambridge Cemetery Loan.							
Due Aug. 1, 1905, int. 4 per cent., 20 yrs. . . .							$65,000 00
Total Funded City Loan							$2,044,000 00

THE FUNDED WATER DEBT.

Due May 1, 1891, int. 6 per cent.,			20	yrs.	$50,000	
July 1, 1892,	"	6	"	20	"	335,000
April 1, 1894,	"	6	"	20	"	150,000
Nov. 1, 1894,	"	4	"	10	"	36,000
April 1, 1895,	"	6	"	20	"	160,000
July 1, 1896,	"	6	"	20	"	103,000
July 1, 1897,	"	6	"	20	"	16,000
July 1, 1898,	"	5	"	20	"	12,500
May 1, 1910,	"	4	"	25	"	288,000
April 1, 1911,	"	$3\frac{1}{2}$	"	25	"	100,000
July 1, 1911,	"	$3\frac{1}{2}$	"	25	"	75,000
Nov. 1, 1906,	"	$3\frac{1}{2}$	"	20	"	43,000
Oct. 1, 1907,	"	4	"	20	"	75,000
Oct. 1, 1907,	"	4	"	20	"	15,000
Nov. 1, 1907,	"	4	"	20	"	22,000
July 1, 1908,	"	4	"	20	"	46,000
Aug. 1, 1908,	"	4	"	20	"	25,000
July 1, 1909,	"	4	"	20	"	20,000
July 1, 1910,	"	4	"	20	"	75,000
Sept. 1, 1910,	"	4	"	20	"	125,000
Total funded Water Debt						$1,771,500 00

Recapitulation.

Amount of funded City Loan upon which interest is at 6 per cent.		$1,016,000 00
Amount of funded City Loan upon which interest is at 5 per cent.		150,000 00
Amount of funded City Loan upon which interest is at 4 per cent.		853,000 00
Amount of funded City Loan upon which interest is at $3\frac{1}{2}$ per cent.		25,000 00
		$2,044,000 00
Amount of Water Loan upon which interest is at 6 per cent.	$850,000	
Amount of Water Loan upon which interest is at 5 per cent.	12,500	
Amount of Water Loan upon which interest is at 4 per cent.	727,000	
Amount of Water Loan upon which interest is at $3\frac{1}{2}$ per cent.	218,000	
		$1,771,500 00

Temporary loans for the past ten years, and interest paid upon the same: —

Year.	Temporary Loan.	Interest paid upon the Loan.
1881	$575,000	$9,933 48
1882	525,000	9,720 05
1883	600,000	14,880 25
1884	540,000	15,795 37
1885	300,000	13,790 52
1886	450,000	5,653 83
1887	555,000	9,222 24
1888	400,000	9,497 36
1889	490,000	5,919 54
1890	425,000	7,570 57

Sinking Funds.

Amount of Fund Nov. 30, 1889		$483,060 78
RECEIVED		
From City Treasurer, being amount appropriated by the city council to be derived from taxation . .	$66,380 00	
Interest accumulations	20,465 04	
		$86,845 04
		$569,905 82
EXPENDED		
For City Loan Bonds, maturing July 1st 1890		$20,000 00
Amount of Fund, Nov. 30, 1890 .		$549,905 82

Water Works Debt.

Funded Water Loan	$1,771,500 00
Less Sinking Fund	765,754 67
	$1,005,745 33
The Water Works are valued at their total cost, viz	$2,867,734 83

Water Works (Sinking Fund).

Amount of Fund Nov. 30, 1889		$728,658 53
RECEIVED		
From the City Treasurer for amount due and appropriated from the revenue of the Water Works	$48,945 00	
Also the surplus revenue . . .	15,945 39	
Interest accumulations	32,205 75	
		$97,096 14
		$825,754 67
EXPENDED		
For Water Bonds, maturing July 1, 1890		$60,000 00
Amount of Fund, Nov. 30, 1890 .		$765,754 67

Cemetery Fund.

Amount of Fund, Nov. 30, 1889		$16,247 59
RECEIVED		
For perpetual care of lots in Cambridge Cemetery	$4,118 70	
Interest accumulations	609 24	
		4,727 94
Amount of Fund, Nov. 30, 1890		$20,975 53

This fund is held in trust by the Committee on Finance and is invested as follows:—		
Cambridge Bonds	$16,000 00	
Cambridge Savings Banks .	4,975 53	
		$20,975 53

The Trust Funds

Assumed by the City are held by trustees, and interest is paid upon them at the rate of six per cent. annually, as follows: —

Name of Fund.	Amount.	Interest.	
Daniel White Charity Fund.....	$5,000	at 6 per cent.	$300 00
Dowse Institute Fund.....	10,000	at 6 per cent.	600 00
Sanders Temperance Fund.....	10,000	at 6 per cent.	600 00
	$25,000		$1500 00

Taxes.

The amount of taxes assessed by the Board of Assessors on the real and personal estates and polls of Cambridge, for the year 1890, was as follows: —

Valuation of real estate	$52,235,000 00
Valuation of personal estate	15,339,925 00
	$67,574,925 00

Assessed at $15.60 per $1000 gives	1,054,167 53
19127 polls at $2.00	38,254 00
379 polls of women at 50 cents each	189 50
Bank stock (non-resident separately assessed	6,590 61
	$1,099,201 64

This tax is divided as follows:

For City purposes*	$956,052 35
County assessments	49,851 13
Overlay	30,698 55
State assessments	54,180 00
State charge for non-resident bank stock	6,590 61
Additional assessments	1,829 00
	$1,099,201 64

Increase in number of polls since last year:

863 polls at $2.00	$1,726 00
205 polls at 50 cents	102 50
Increase in real estate valuation	1,910,825 00
Increase in personal valuation	379,825 00
	$2,292,478 50
Decrease in valuation by abatements	1,314,310 90
Gain in valuation since last year	978,167 60

Number of houses in 1890	10,615
Number of houses in 1889	10,222
Number of houses built during the past year	393

Number of horses assessed	4,777
Number of cows assessed	526
Number of swine assessed	95

*To meet the city expenses, the income from various departments is added to this sum raised by taxation,

Statement of the valuations of the personal property and real estate of the City of Cambridge, with the number of polls, dwellings, and rate of taxation for the past ten years :—

Year.	Polls.	Personal.	Real Estate.	Total.	Dwellings.	Rate per $1000.
1881	13,678	$12,401,390	$38,691,900	$51,093,290	8,331	$16 00
1882	13,922	11,577,080	39,091,200	50,668,280	8,489	16 60
1883	14,870	11,975,640	39,821,700	51,797,340	8,572	16 40
1884	15,399¼	12,259,491	41,289,200	53,548,691	8,781	16 80
1885	16,036	12,758,255	42,588,300	55,346,555	9,106	15 50
1886	16,534½	14,490,470	44,955,200	59,445,670	9,398	15 00
1887	17,139¼	13,358,910	46,344,700	59,703,610	9,761	16 00
1888	18,086¾	14,296,740	48,420,600	62,717,340	9,927	15 00
1889	18,307½	14,960,100	50,324,175	65,284,275	10,222	16 00
1890	19,221¾	15,339,925	52,235,000	67,574,925	10,615	15 60

Abatements and discounts upon taxes for the past ten years, and amount of tax uncollected December 1, 1890: —

Year.	Total tax.	Total Abatement.	Total Discounts.	Amount of tax uncollected Dec. 1, 1890.
1881	$850,730 61	$12,958 90	$30,029 45	
1882	873,793 41	12,230 20	30,783 78	
1883	885,938 96	14,784 62	31,188 00	
1884	937,938 64	11,210 31	32,926 83	
1885	895,012 06	14,174 11	32,781 78	$9,176 35
1886	930,228 50	17,497 00	32,532 57	9,161 33
1887	995,964 90	15,443 74	26,054 53	10,177 70
1888	982,829 50	21,667 20	25,366 53	10,567 50
1889	1,087,502 60	20,722 71	28,081 09	16,313 70
1890	1,099,201 64	20,839 42	28,012 44	101,747 08
				$157,143 66

Net valuation for three years:

Year.	Total valuation.	Abatement.	Net valuation.
1888	$62,717,340	$1,444,480 00	$61,272,860 00
1889	65,284,275	1,295,169 38	63,989,105 62
1890	67,574,925	1,314,310 90	66,260,614 10
	$195,576,540	$4,053,960 28	$191,522,579 72

3)191,522,579 72

Average valuation for 1888, 1889 and 1890 . 63,840,859 90
Asssessed at $12.00 per $1000, gives . . . $766,090 32

Which is the legal limit of taxation for municipal purposes for 1891 outside of the Sinking Fund requirements, interest on the debt, and State and County Tax.

Abatements, Taxes.

No appropriation is made for Abatements, as the Assessors allow in the Overlay an amount sufficient to cover the same.

The Overlay for 1890 was 30,698 55
The amount of tax abatements was 20,839 42

Balance available for City Purposes . . . $9,859 13

BORROWING CAPACITY.

The borrowing capacity of the City, on Dec. 1, 1890, is as follows:—

Net funded City Debt		$1,494,094 18
Average valuation for 1888, 1889 and 1890	$63,840,859 90	
$2\frac{1}{2}$ per cent. on the same . . .	1,596,021 50	
Leaving a margin of		101,927 32
To which may be added the exemption allowed by the Legislature on account of the Harvard Bridge		200,000 00
Borrowing capacity for 1891 .		$301,927 32

THE CITY LIABILITIES.

Funded City Loan	$2,044,000 00
Contingent Loan, being a note to the Trustees of the Sinking Fund of the Water Works	200,000 00
Trust Funds	25,000 00
Gross City Liabilities	$2,269,000 00

THE CITY ASSETS.

Cash in Treasury	$55,949 06
City Property	2,357,961 27
Sinking Fund	549,905 82
Taxes, Sewer Assessments, and Miscellaneous Bills due the City	169,532 95
	$3,133,349 10

Statement of the expenditures for the fiscal year 1889–90, showing the increase or decrease from the amount appropriated by the City Council, February 26, 1890:—

Titles of Accounts.	Estimated expenses.	Actual expenses.	Increase.	Decrease.
Bridge (Harvard)	$29,034 13	$13,722 78		15,311 35
Bridges (W[illegible]oston, Craigie's and Prison Pt.	7,500 00	7,499 38		62
Cambridge Cemetery	16,000 000	16,021 96	$21 96	
Cambridge Public Library	12,000 00	11,875 87		124 13
Discounts (Taxes)	30,000 00	28,012 44		1,987 56
Engineering	9,100 00	9,045 90		54 10
Fire Department	57,150 00	56,501 50		648 50
Health Department	3,500 00	3,128 62		371 38
Incidental Expenses	41,000 00	41,211 86	211 86	
Interest	118,000 00	119,275 15	1,275 15	
Lighting Streets	51,500 00	49,269 02		2,230 98
Pauper Department:—				
Almshouse	26,500 00	26,533 63	33 63	
House Offal	18,500 00	18,044 75		455 25
Outside Aid	32,500 00	30,447 46		2,052 54
Salary of Assistant City Physician	1,250 00	1,395 85	145 85	
Police Department	96,000 00	94,872 37		1,127 63
Public Property:—				
City Buildings, Care and Repairs	12,000 00	11,142 62		857 38
Incidentals	1,000 00	1,630 52	630 52	
New City Hall (Furnishings)		3,159 81	3,159 81	
New Engine House and Land	17,000 00	6,270 95		10,729 05
School Houses:—				
Care and Repairs	39,000 00	36,491 85		2,508 15
New High School House	195,345 65	94,345 35		101,000 30
New School House in Ward Four	55,000 00	25,355 37		29,644 63
New Putnam School House	30,600 00	32,626 21	2,026 21	
Salaries	26,950 00	27,137 51	187 51	
School Department:—				
Incidental Expenses	700 00	612 05		87 95
Salaries	191,000 00	193,877 21	2,877 21	
Text-Books and Supplies	16,000 00	15,668 73		331 27
Sewer Department:—				
Construction (Belmont Sewer System)	14,000 00	5,830 69		8,169 31
Construction (Sundry Sewers)	25,000 00	16,912 93		8,087 07
Maintenance	26,000 00	28,039 71	2,039 71	
Sinking Funds	66,380 00	66,380 00		
State Aid	16,600 00	19,519 32	2,919 32	
Stationery and Printing	4,500 00	5,079 41	579 41	
Street Department:—				
Bridges (Rebuilding, Widening and Maintenance)	32,000 00	10,798 43		21,201 57
Extensions and Widenings:—				
Brattle Street	2,499 36	2,774 61	275 25	
Charles River Street	1,000 00	958 00		42 00
Front Street	4,776 55	13,986 09	9,209 54	
Main Street	1,659 00			1,659 00
Filling and Grading of Front Street	6,521 97			6,521 97
Maintenance, including the Collection of Ashes	110,000 00	110,650 77	650 77	
Paving:—				
Bridge Street	18,000 00	17,997 68		2 32
Edgestones and Sidewalks	19,400 00	21,637 97	2,237 97	
North River Flagging Stone	1,000 00	1,000 00		
Shade Trees and Public Grounds	5,000 00	5,003 35	3 35	
Watering (Sundry Streets)	18,000 00	16,716 47		1,283 53
Water Works:—				
Construction	40 000 00	46,987 15	6,987 15	
Construction (Fresh Pond Land Account)	25,000 00	198,706 89	173,706 89	
Construction (Stony Brook Water Supply)	25,000 00	11,707 70		13,292 30
Interest	81,775 00	82,195 00	420 00	
Maintenance	40,000 00	40,037 70	37 70	
Rates, Fines, etc. (Abatements)	4,000 00	4,533 40	533 40	
Rates, Fines, etc. (Refunds)	2,500 00	2,201 30		298 70
Sinking Funds	48,945 00	64,890 39	15,945 39	
Supplies	6,300 00	5,525 24		674 76
Supplies (Abatements)	200 00	20 99		179 01
Allowance for uncollected Taxes of 1890	90,000 00	101,747 08	11,747 08	
	$1,870,186 66	$1,877,114 99	$237,862 64	$230,934 31
Increase in actual expenses over estimated expenses	6,928 33			6,928 33
	$1,877,114 99	$1,877,114 99	$237,862 64	$237,862 64

ESTIMATED RECEIPTS.

Statement of the estimated receipts for the fiscal year ending November 30, 1890, submitted to the City Council in February, 1890, and the actual receipts.

Titles of Accounts.	Estimated.	Actual.	Increase.	Decrease.
Bridges, W. B., C., and P. P....	$400 00	$605 40	$205 40	
Cambridge Cemetery.....	16,000 00	19,490 77	3,490 77	
Cambridge Public Library.....	4,000 00	4,596 85	596 85	
Engineering.....	100 00	97 50		$2 50
Fire Department.....	150 00	264 47	114 47	
Incidental Expenses.....	10,000 00	8,452 34		1,547 66
Interest.....	3,000 00	4,183 36	1,183 36	
Pauper Department:—				
Almshouse.....	9,500 00	11,263 15	1,763 15	
House Offal.....	7,000 00	7,386 33	386 33	
Outside Aid.....	4,000 00	4,159 22	159 22	
Police Department	5,000 00	5,285 72	285 72	
Public Property, City Buildings..	2,000 00	1,862 02		137 98
Salaries.....	1,500 00	1,500 00		
School Department:—				
Salaries	1,000 00	1,360 69	360 69	
Text Books and Supplies.....	300 00	244 53		55 47
Sewers:—				
Construction.....	18,500 00	12,876 69		5,623 31
Maintenance	2,000 00	1,857 05		142 95
State Aid	10,600 00	10,863 25	263 25	
Street Department:—				
Bridges.....	3,300 00			3,300 00
Maintenance.....	2,000 00	2,751 57	751 57	
Paving	9,400 00	10,857 16	1,457 16	
Watering.....	12,000 00	12,935 99	935 99	
Water Works:—				
Rates, Fines, etc.,.....	233,220 00	238,743 71	5,523 71	
Supplies	6,500 00	6,613 37	113 37	
Corporation Tax.....	50,000 00	50,866 66	866 66	
National Bank Tax.....	11,000 00	11,140 35	140 35	
Uncollected Taxes for 1889 and previous years.....	80,000 00	83,753 12	3,753 12	
	$502,470 00	$514,011 27	$22,351 14	$10.809 87
Increase.....	11,541 27			11,541 27
	$514,011 27	$514,011 27	$22,351 14	$22,351 14

UNESTIMATED RECEIPTS.

The unestimated receipts amounted to $17,057.38 and were credited to the following accounts:—

Betterments (extension and widening of Front Street)	$326 63
City lands (sale of City land)	2,250 00
Amount carried forward	$2,576 63

Amount brought forward	$2,576 63
Lighting Streets (sundry receipts)	75 80
Public Property, incidentals (sundry receipts) .	2 00
Public Property, school-houses (sundry receipts)	87 90
Shade trees and public grounds (sundry receipts)	113 10
Tax Lien (sale of tax titles)	14 60
Tax Sale, Surplus (surplus receipts)	933 01
Water Works, construction (sundry receipts) .	69 64
Water Works, construction, Fresh Pond land .	
Water Works, (premium on bonds)	12,120 25
Water Works, interest (accrued interest) . . .	627 77
Water Works, maintenance (sundry receipts) .	436 68
	$17,057 38

TRANSFERS.

The following transfers were made from the appropriations mentioned, to make up deficiencies occurring in the appropriations to which transfers were made, viz.:—

From the appropriation for	Amounts	To the appropriation for	Amounts
Bridges: W. B., C. and P. P.	$91 79	Interest	$91 79
Cambridge Cemetery	3,387 11	Incidental Expenses	3,387 11
Fire Department	400 00	Public Property, New Engine House	400 00
Incidental expenses	3,175 25	Public Property, Incidentals	600 00
		Public Property. Putnam School House	1,800 00
		Street Department, extension and widening Brattle Street	275 25
		Stationery and Printing	500 00
Pauper Department, Outside Aid.	150 00	Pauper Department, Salary of Assistant City Physician	150 00
Public Property, City Buildings	254 73	Public Property, incidentals	28 52
		Public Property, Putnam Schoolhouse	226 21
Public Property, Schoolhouses	2,516 52	School Department, Salaries	2,516 52
School Department, T. B. & S.	187 51	Salaries	187 51
Sewers, Construction, Belmont	8,169 31	Sewers, Maintenance	3,169 31
State Aid	79 41	Stationery and Printing	79 41
Street Department. extending and widening Main Street	1,659 00	Street Department, Paving	1,659 00
Street Department, filling and grading of Front Street	6,521 97	Street Department, ex. etc., wid. Front Street	6,521 97
Water Works, Maintenance	354 39	Water Works, R. F. etc., abatements	354 39
Water Works, Supplies, Abatements	179 01	Water Works, R. F. etc., abatements	179 01

APPROPRIATIONS AND EXPENDITURES.

THE AMOUNT OF THE SEVERAL APPROPRIATIONS MADE BY THE CITY COUNCIL DURING THE YEAR — THE TRANSFERS FROM ONE APPROPRIATION TO ANOTHER — THE EXPENDITURES IN DETAIL UNDER EACH APPROPRIATION, AND THE UNEXPENDED BALANCES NOV. 30, 1890.

Bridge, Harvard.

Appropriation			$29,034 13
(The expenses of the Harvard Bridge are divided equally between the cities of Boston and Cambridge, and these amounts represent the amounts paid by Cambridge).			
EXPENDED.			
For Salaries:—			
Leander Greeley, commissioner	$166 67		
Warren F. Spaulding, secretary	350 00		
Draw-tenders	1,029 92		
Engineers	297 83		
		$1844 42	
Contractors:—			
Masonry piers, Shields & Carroll	$5,500 00		
Wooden flooring etc., W. H. Keyes & Co.	2,884 60		
Roadway Sheathing, Alexander McInnis	667 87		
Iron plates, Manley M'f'g Co.	136 50		
Iron gates, G. W. & F. Smith Iron Co.	394 75		
Lanterns, globes and brackets, Nathaniel Tufts	304 60		
Piping for lamp-posts, Ingalls & Kendricken	87 50		
Draw-tender's house, J. Ruth & Co.	622 50		
Iron work, Miller & Shaw	356 23		
" " D. H. Andrews	14 54		
Painting, John E. Joyce	24 22		
" Louis F. Perry	260 00		
		$11,253 31	
Carpentry and lumber		161 79	
Furniture		28 49	
Gas-fitting and plumbing		326 39	
Rent of land		52 50	
Tools and supplies		55 88	
			$13,722 78
Balance unexpended			$15,311 35

Bridges, West Boston, Craigie's, and Prison Point.

Appropriation			$7,500 00
Surplus receipts			205 40
			$7,705 40
Transferred to Interest			91 79
			$7,613 61

RECEIVED.

For Rent, wharfage, etc.	$605 40		
The expenses of these bridges are divided equally between the cities of Boston and Cambridge, and these amounts represent the amounts paid by Cambridge.			

EXPENDED.

For Salaries:—			
Commissioner, Wm. J. Marvin	499 92		
Clerk, Charles S. Parsons	150 00		
Engineers and draw-tenders	2,119 80		
		$2,769 72	
Car fares, messenger fees		38 67	
Printing, postage and stationery		16 25	
Electric Lighting:—			
Boston Electric Light Co.	253 50		
Cambridge Electric Light Co.	712 50		
		966 00	
Fuel, Geo. M. Winslow & Co.		230 85	
Hardware, tools and supplies		275 03	
Lumber:—			
John Clary	264 76		
Geo. W. Gale	130 58		
Geo. McQuesten & Co.	502 17		
Sundry parties	180 70		
		$1,078 21	
Repairs:—			
Carpentry, Josiah Shaw	727 68		
Iron work, Miller & Shaw	364 28		
Painting, T. L. Knowles	162 00		
Paving, West End Street Railway Co.	222 14		
Sundry repairs	48 07		
		$1,524 17	
Amounts carried forward		$6,898 90	$7,613 61

Amounts brought forward		$6,898 90	$7,613 61
For Stone		69 20	
Teaming:—			
Charles Linehan	100 45		
Thos. O'Hara	5 25		
		105 70	
Water, City of Boston		25 58	
Watering Bridge Roadway, Proctor Bros. & Billings		400 00	
			7,499 38
Balance unexpended			$114 23

Cambridge Cemetery.

Appropriation		$16,000 00
Surplus Receipts		3,490 77
		$19,490 77
Transferred to Incidental Expenses		3,387 11
		$16,103 66

RECEIVED.

For Burial Fees	4,128 75	
Care of Lots	4,432 02	
Foundations, brick graves, etc.	1,244 24	
Interest on Fund	759 58	
Rent	316 58	
Sales of —		
Old Buildings, etc.	205 55	
Hay	269 91	
Lots	8,134 14	
	$19,490 77	

EXPENDED.

For Salaries:—			
Supt. Chas. S. Childs	1,299 96		
Asst. Supt. H. C. Hobbs	822 37		
Book-keeper J. Watson Taylor	913 13		
Clerk of Commissioners, Walter W. Pike	50 00		
Laborers	10,006 52		
		$13,091 98	
Amounts carried forward		$13,091 98	$16,103 66

Amounts brought forward . . .		$13,091 98	$16,103 66
For Bricks, M. W. Sands		65 00	
Car tickets and carriage hire . .		27 88	
Expressage		9 65	
Fuel, H. Wellington & Co. . . .		50 40	
Grave covers, tablets, head-stones, etc.:—			
Jos. W. Grigg	119 23		
John J. Horgan	249 50		
Frank Sullivan	124 46		
Sundry parties	189 27		
		682 46	
Hardware, tools and supplies:—			
Burditt & White	200 33		
Sundry parties	120 07		
		320 40	
Horses, etc.:—			
Feed	165 95		
Harness	57 25		
Shoeing	42 28		
		265 48	
Lumber, N. N. Stickney		141 62	
Manure, J. Finnick.		170 75	
Plants, seeds and trees		216 50	
House furnishings		47 46	
House repairs:—			
Carpentry, M. C. Beedle . . .	333 21		
Roofing	24 36		
Plumbing	80 08		
Heating apparatus	11 23		
Whitening	5 09		
		453 97	
Printing, posting and stationery .		191 85	
Rebate		9 00	
Repairs on receiving tomb . . .		45 00	
Signs		9 90	
Street sprinkling		82 00	
Teaming		92 59	
Telephone rent and tolls		48 07	
			$16,021 96
Balance unexpended			81 70

Cambridge Public Library.

Appropriation	$12,000 00
Surplus receipts	596 85
	$12,596 85

RECEIVED.

For Catalogues and fines	$277 39	
Dog licenses for 1889	4,319 46	
	$4,596 85	

EXPENDED.

For Salaries:—			
Librarian, Miss A. L. Hayward	$999 96		
Assistants	3,236 63		
Janitors, A. J. Ayers	850 00		
James McVey	30 00		
		$5,116 59	
Advertising		15 50	
Binding books, E. W. Bettinson		854 56	
Books, periodicals, etc :—			
W. B. Clarke & Co.	$349 75		
Estes and Lauriat	1,370 42		
F. L. Beunke	196 21		
Little, Brown & Co.	214 67		
Carl Schoenhof	129 78		
Willard Small	114 10		
Sundry parties	271 99		
		2,646 92	
Delivering books.—			
E. W. Bettinson	276 25		
W. B. Cade	209 00		
Edw. Thorndike	65 00		
J. W. Hunnewell	35 00		
		585 25	
Expressage		48 59	
Fuel:—			
Richardson and Bacon	173 00		
H. Wellington & Co.	257 04		
		430 04	
Furniture and furnishings		138 70	
Lighting:—			
Cambridge Electric Light Co.	721 65		
Cambridge Gas Light Co.	524 30		
		1,245 95	
Amounts carried forward		$11,082 10	$12,596 85

Amounts brought forward . . .		$11,082 10	$12,596 85
For Newspaper article, T. W. Higginson		5 00	
Printing, postage, and stationery		416 22	
Repairs		255 97	
Supplies		116 58	
			11,875 87
Balance unexpended . . .			$720 98

Discounts, Taxes

Appropriation	$30,000 00

EXPENDED.

For discount on taxes of 1890, paid on or before Oct. 10, 1890 .	28,012 44
Balance unexpended . . .	$1,987 56

Engineering.

Appropriation	$9,100 00

RECEIVED.

For use of instruments	$25 50	
Writing descriptions	72 00	
	$97 50	

EXPENDED.

For Salaries: —			
City Engineer, Lewis M. Hastings	3,000 00		
Assistant engineers	5,170 60		
Clerk, Mary E. Rowen	306 67		
		8,477 27	
Car-fares and carriage hire . . .		25 25	
Care of rain gauge, Alonzo S. Fiske		12 50	
Examination of bridges, J. P. Perkins & Son		5 00	
Furniture, Phillips Bros. & Co. .		230 00	
Hardware, tools and supplies . .		40 83	
Maps, atlas, etc.		20 50	
Printing, postage and stationery		144 55	
Typewriter, W. M. Belcher . .		90 00	
			9,045 90
Balance unexpended . . .			$54 10

Fire Department.

Appropriation . . .			$57,150 00
Surplus receipts . . .			114 47
			57,264 47
Transferred to Public Property, New Engine House . . .			400 90
			56,864 47

RECEIVED.

For Manure	$75 00	
Old fuel wagon . .	30 00	
Old hose carriage . .	8 00	
Old materials . . .	141 47	
	264 47	

EXPENDED.

For Salaries:—			
Chief Engineer Thos. J. Casey . . .	1,500 00		
Asst. Engineer and Clerk, N. W. Bunker	400 00		
Asst. Engineer, Chas. W. Brackett . .	375 00		
Asst. Engineer W. B. Cade	375 00		
Permanent Men, Engineers, Firemen, Drivers, etc. . .	25,965 00		
Call men	13,891 56		
Substitutes	1,039 14		
		$43,545 70	
Apparatus:—			
Coal wagon, Abbott Downing Co. .	300 00		
Hose wagon, Abbott Downing Co.	475 00		
Hook and ladder truck, Abbott Downing Co. . .	1,200 00		
Amounts carried forward . . .	$1,975 00	$43,545 70	$56,864 47

Amounts brought forward . .		$1,975 00	$43,545 70	$56,864 47
For Extinguishers, J. Hinman . . .		85 05		
Ladders, C. W. H. Moulton & Co. .		192 70		
			2,252, 75	
Repairs, Manchester L. Works . .		102 80		
John Lane . .		144 39		
Sundry parties .		325 10		
			572 29	
Bedding and furniture			149 33	
Care of hydrants . .			21 00	
Carriage hire for Committee			18 00	
Expressage			33 20	
Fines remitted . .			194 50	
Fire hats, badges and regalia . .			113 00	
Fuel:—				
H. Wellington & Co.		574 56		
Sundry parties . .		210 97		
			785 53	
Gas, Cambridge Gas Light Co. . . .			876 63	
Horses:—				
Feed for:—				
J. S. Bradeen .	962 55			
McPherson Bros.	1,308 24			
Sundry parties .	96 96			
		2,367 75		
Harness and repairs:—				
Wm. Mitchell . .	107 75			
Sundry parties . .	97 75			
		205 50		
Hire		250 00		
Purchase and exchange:—				
P. H. Dardis . .	175 00			
W. H. Kennedy .	195 00			
J. C. Richardson .	525 00			
		895 00		
Shoeing:—				
Wm. Balmer . .	74 20			
Wm. Bell . . .	75 00			
J. Bolger	64 25			
P. J. Callahan . .	43 50			
Amounts carried forward	$256 95	$3,718 25	$48,561 93	$56,864 47

Amounts brought forward	$256 95	$3,718 25	$48,561 93	$56,864 47
E. E. Donahoe & Co	64 50			
J. F. Gurry . . .	44 50			
D. H. Lehan . .	71 00			
T. Smith . . .	75 50			
J. Ryan	4 00			
		516 45		
Veterinary surgeon and medicine:—				
Wm. Ferguson . .	88 00			
Sundry parties . .	47 17			
		135 17		
			4,369 87	
Hose, couplings and repairs:—				
Boston Woven Hose Co.			990 10	
House repairs . . .			65 89	
Ice			42 65	
Printing			36 20	
Prof. Services, Dr. P. J. Finnegan . .			5 00	
Refreshments at fires			20 00	
Removing bell from Latin schoolhouse .			60 00	
Signal boxes, Geo. M. Stevens			150 00	
Supplies:—				
Brooms, brushes, etc.		63 90		
Chemicals, Poor, Towne & Co. .		522 48		
Electric, E. Rogers and W. E. Decrow		198 90		
A. L. Russell . .		42 51		
Hardware . . .		177 92		
Poles		71 50		
Spelter, Fuller, Dana & Fitz . . .		207 53		
Small supplies, oil, matches, soap, etc.		97 60		
			1,382 34	
Telephone rent, N. E. Telephone and Telegraph Co. .			485 42	
Travelling expenses of Chief . . .			6 64	
Washing bedding, etc.			325 46	
				$56,501 50
Balance unexpended,				$362 97

Health Department.

Appropriation			$3,500 00
EXPENDED.			
For Salaries:—			
Medical Inspector, Dr. Edwin Farnham	1,500 00		
Sanitary Inspector, Charles S. Lincoln	1,000 00		
Clerk, John McDuffie	175 00		
		2,675 00	
Analysis of water, Wm. B. Hills .		5 00	
Burying dead animals		85 90	
Car tickets		75 00	
Carriage hire		3 00	
Chemicals and disinfectants . .		38 44	
Cow-pox points, Henry A. Martin & Son		35 25	
Police Duty, Wm. H. Carroll . .		25 00	
Printing, postage and stationery .		82 38	
Prof. services, Geo. F. Piper, Esq.		100 00	
Sundries		3 65	
			$3,128 62
Balance unexpended,			371 38

Incidental Expenses.

Appropriation			$41,000 00
Transferred from Cambridge Cemetery . . .			3,387 11
			44,387 11
Transferred to Public Property, Incidentals .		600 00	
Public Property, Putnam School House		1,800 00	
Street Department, widening of Brattle Street		275 25	
Stationery and printing . .		600 00	
			3,175 25
			$41,211 86
RECEIVED.			
For Costs in D. C. Smart's case .	30 00		
Fees from City Officers:—			
City Clerk	2,181 71		
Amounts carried forward . . .	$2,181 71	$30 00	$41,211 86

Amounts brought forward . . .	$2,181 71	$30 00	$41,211 86
City Treasurer	731 90		
City Weighers	125 32		
Sealer of Weights and Measures	495 37		
		3,534 30	
Licenses:—			
Grease and junk	39 00		
Hawkers and peddlers . . .	100 00		
Liquor	41 00		
Milk and butterine	188 50		
		368 50	
Premium on High School Loan .		4,510 00	
Sundry receipts		9 54	
		$8,452 34	

EXPENDED.

For Assessor's Department.			
Abstracting deeds:—			
Byron Boyd . . . $ 15 00			
C. G. Pope . . . 313 94			
	328 94		
Carriage hire	21 00		
Directories	7 50		
Salaries of			
Assistant Assessors:—			
L. B. Grover . . 304 00			
Daniel J. Hayes . 232 00			
C. H. Hunnewell, 232 00			
John Lennon . 314 00			
Geo. L. Mitchell . 100 00			
Clerks:			
Lizzie E. Estes, . 600 00			
Ida G. Wellington 500 00			
Sundry temporary clerks. . . . 1,052 25			
	3,334 25		
Subscription, Banker and Tradesman	5 00		
		3,696 69	
Auditor's Department:			
Clerk, Miss E. L. Cogan . . .	512 00		
Directories	7 50		
		519 50	
City Clerk's Department:—			
Census of births	268 50		
Clerical assistance	487 50		
Amounts carried forward . . .	$756 00	$4,216 19	$41,211 86

Amounts brought forward . . .	$756 00	$4,216 19	$41,211 86
For Directories	7 50		
Law books	16 00		
License badges	25 20		
Newspapers	11 75		
Printing	100 73		
Repairs	3 00		
Returns of births and deaths .	118 75		
Serving warrants, posting notices, etc.	67 75		
		1,106 68	
City Messenger's Department:—			
Asst. Messenger, Wm. Walker .	304 00		
Carriage hire	71 25		
Directories	9 50		
Expressage	94 90		
Newspapers	2 00		
Railroad Guide	1 50		
Rent P. O. box	4 00		
		487 15	
City Solicitor's Department:—			
Barge for jury	6 00		
Clerk's fees, Middlesex County	6 25		
Copy of evidence	30 85		
Examining records	10 00		
Travelling expenses	42 65		
Typewriting	165 98		
Witness fees and service . . .	38 90		
		300 63	
City Treasurer's Department:—			
Advertising	14 13		
Carriage hire	313 00		
Car tickets	810 00		
Clerical assistance:—			
Regular	3,456 25		
Temporary	1,008 67		
Commissions for collecting poll taxes	851 00		
Directories	9 50		
Making tax sale descriptions . .	72 00		
Postal cards	167 00		
Printing bonds	90 00		
Recording deeds	26 47		
Sundries	6 50		
		6,824 52	
Amounts carried forward . . .		$12,935 17	$41,211 86

Amounts brought forward . . .		$12,935 17	$41,211 86
Civil Service Department:—			
Clerk, Charles S. Lincoln . . .	200 00		
Stationery	3 90		
		203 90	
Clerk of Committees Department:—			
Clerk, Eben W. Pike	936 00		
Directories	9 50		
Newspapers	4 50		
Stamp	3 00		
		953 00	
Commissioners of Sinking Funds:—			
Clerk, John McDuffie	25 00		
Rent of box in Safe Deposit and Trust Co.	70 00		
		95 00	
Milk and Vinegar Inspector's Department:—			
Deputy, John F. Wheeler . . .	200 00		
Analysis and chemicals	13 80		
Professional services	5 00		
Samples	61 26		
		280 06	
Sealer of Weights and Measures Department:—			
Carriage hire	134 50		
Gas	15 25		
Hardware, tools, etc.	57 26		
Labor, C. D. Kinnear	352 50		
J. L. Thayer	174 37		
Sundry parties	7 75		
Posting notices	3 00		
Printing and stationery	34 50		
Repairs	12 86		
Stamps and brands	15 02		
		807 01	
Page to Common Council, Wm. Locklin		50 00	
SUNDRY EXPENSES.			
City Charter (new):—			
Clerk, Walter W. Pike	75 00		
Copying	11 50		
Printing	39 25		
Reporting draft	16 00		
Typewriting	10 60		
		152 35	
Amounts carried forward . . .		$15,476 49	$41,211 86

Amounts brought forward . . .		$15,476 49	$41,211 86
Damages awarded and suits settled:—			
Elizabeth C. Allen	63 90		
Lucy C. Bemis	917 35		
Bateman heirs	442 83		
Lewis B. Chandler	25 00		
Jeremiah Downing	300 00		
John Friel	27 80		
John Gilmore	129 45		
Mary A. Griffin	500 00		
Eliza M. Harris	680 71		
Philip McCullough	700 00		
Michael Newman	125 00		
Ellis Norris	75 00		
Albert A. Pope *et al.*	2,210 00		
Geo. E. Temple	30 00		
		6,227 04	
Executions of Court:—			
Hannah O. Aiken	1,177 92		
Boston Tow Boat Co.	225 00		
Caroline E. Cooley	150 00		
Walter F. Hayden	1,087 02		
Eleanor Jacob	285 10		
James W. Mattheson	400 00		
Thomas Scully	388 48		
Mary E. Sylvia	700 00		
		4,413 52	
G. A. R. expenses Memorial Day and Encampment week:—			
Badges	12 50		
Carriage hire	291 50		
Cars, West End Railway Co. . .	110 00		
Decorations	125 00		
Post 30	350 00		
Post 56	350 00		
Post 57	350 00		
Post 186	376 00		
Refreshments	13 00		
		1,978 00	
Contract with J. P. Stearns for building bell tower on engine house No. 2		1,400 00	
Harvard Bridge, expenses of legislative committee		373 69	
Insurance on patrol wagon		17 00	
Invalid tax deeds		680 81	
Liquor licenses		10 25	
Labor on fountain		13 06	
Amounts carried forward . . .		$30,589 86	$41,211 86

Amounts brought forward		$30,589 86	$41,211 86
Music for High School Exhibition		50 00	
Refreshments for committee		40 50	
Repairing ambulance		38 00	
Ringing bells on holidays		54 00	
Running ambulance, C. W. Dailey		136 00	
Setting tablet, Washington School		50 00	
Sundries		28 26	
Taking down trees on City Hall lot		33 00	
Tax on Almshouse lands in Somerville		400 40	
Veterinary Surgeon, W. Ferguson		87 50	
Water supply for fountain		18 95	
		31,526 47	
Election expenses:—			
Salaries—			
Registrars of voters,			
Isaac Bradford	1,000 00		
John W. Coveney	1,000 00		
James Cox	1,000 00		
Horace K. Osborn	1,200 00		
Clerical assistance	228 50		
		4,428 50	
Advertising		98 00	
Binding voting lists, E. W. Bettinson		98 20	
Carpentry		62 42	
Carriage hire		60 00	
Expressage		28 49	
Labor preparing voting rooms		286 03	
Posting lists, serving warrants and notices		60 25	
Precinct officers		2,607 00	
Refreshments		50 00	
Rent of rooms for caucuses and voting purposes		241 00	
Ringing bells		26 00	
Special officers		122 50	
Stationery and printing:			
John Ford & Son	490 00		
John Wilson & Son	780 20		
Sundry parties	166 11		
		1,436 31	
Sundries		34 29	
Use of barges		25 00	
Voting boxes		21 40	
		$9,685 32	
Total expenses			$41,211 86

Interest.

Appropriation		$118,000 00
Surplus receipts		1,183 36
Transferred from Bridges W. B., C. and P. P.		91 79
		119,275 15

RECEIVED.

From Commissioners of the Sinking Fund for interest on prepayment	56 46	
First National Bank, interest on deposit	2,279 58	
Sundry persons, interest on taxes	1,849 72	
	4,183 36	

EXPENDED.

For Cemetery Fund	759 58	
Daniel White, charity	150 00	
Dowse Institute fund	600 00	
Funded loan, coupons	88,050 00	
Funded loan, registered	13,545 00	
Note to Trustees of Sinking Fund of Water Works	8,000 00	
Sanders Temperance fund	600 00	
Temporary loan	7,570 57	
		$119,275 15

Lighting Streets.

Appropriation		$51,500 00
Surplus receipts		75 80
		51,575 80

RECEIVED.

For damage to lamps	3 00	
Lamps and setting	72 80	
	$75 80	
Amount carried forward		$51,575 80

Amount brought forward			$51,575 80

EXPENDED.

Salaries:—			
Supt., B. Otis Danforth . . .	900 00		
Lamplighters	7,577 11		
		8,477 11	
Carriage hire for committee . . .		34 00	
Carriage hire for Superintendent .		93 00	
Chimneys, Jones, McDuffie & Stratton		39 20	
Electric Lighting, Cambridge Electric Light Co.:			
Arc lights	20,274 35		
Incandescent lights.	5,648 95		
Labor	21 00		
		25,944 30	
Gas Lighting, Cambridge Gas Light Co.	13,949 01		
Labor and fittings	276 03		
		14,225 04	
Ladders, C. W. H. Moulton & Co.		9 50	
Oil, Maverick Oil Co.		218 07	
Printing		13 71	
Repairs, tools and supplies . . .		215 09	
			49,269 02
Balance unexpended			$2,306 78

Pauper Department, Almshouse.

Appropriation	$26,500 00
Surplus receipts	1,763 15
	28,263 15

RECEIVED.

For barrels	25 75	
Board of inmates	302 49	
Farm produce	4,364 03	
Grease and bones	104 48	
Proceeds of chair shop	794 36	
Stone	5,636 90	
Sundries	26 53	
Weighing fees	8 61	
	$11,263 15	
Amount carried forward . .		$28,263 15

Amount brought forward . .			$28,263 15

EXPENDED.

For Salaries :—			
Supt., M. L. Eldridge	1,500 00		
Asst. Supt., F. N. Vose . . .	572 00		
Chaplain, F. W. Holland . . .	100 00		
School teacher, Alice H. Fawcett	450 00		
Organist, Minnie G. Hillman . .	150 00		
Sundry house officials	3,258 72		
		6,030 72	
Advertising		9 76	
Burial expenses		78 75	
Cane, Wakefield Rattan Co. . .		318 92	
Carriage and repairs :			
F. Ivers	285 00		
F. L. Chapman	24 25		
		309 25	
Clothing and bedding:—			
Brown, Durrell & Co.	324 78		
Jordan, Marsh & Co.	813 34		
Leopold, Morse & Co.	248 50		
H. Sleap & Co.	118 50		
Smith, Whiting, Conner & Co. .	145 00		
Sheldon Bros.	65 33		
C. D. Wilder	75 80		
Sundry parties	149 47		
		1,940 72	
For expressage		27 75	
Flowers and plants		16 38	
Fuel: —			
H. Wellington & Co.	1,145 25		
Thompson & Baker Coal Co. . .	144 43		
Weighing same	11 25		
		1,300 93	
Furniture and furnishings:—			
Geo. R. McFarlin	111 89		
John H. Pray & Co.	168 54		
Sundry parties	162 94		
		443 37	
Gas, Cambridge Gas Light Co. . .		298 68	
Hay and grain, Clark Bros. . . .		203 61	
Harness and repairs		70 00	
Medicines, surgical instruments, etc.			
Gilman Bros.	133 34		
Sundry parties	28 90		
		162 24	
Amounts carried forward . . .		$11,211 08	$28,263 15

Amounts brought forward . . .		$11,211 08	$28,263 15
Money expended for sundries, M. L. Eldridge.		258 69	
Oil and packing		28 24	
Repairs and alterations:			
Geo. W. Gale	282 69		
W. B. Kneeland	87 17		
J. H. Stevens & Co.	174 06		
M. N. Stearns	383 50		
Walworth Mfg. Co.	119 83		
Sundry parties	365 90		
		1,413 15	
Soap:—			
John Reardon & Son	120 00		
Frank H. Teele	180 00		
		300 00	
Stationery, newspapers, etc. . .		69 68	
Subsistence supplies:—			
Boyd, Leeds & Co.	546 48		
Cobb, Bates & Yerxa	628 50		
David Ellis & Co.	528 60		
E. E. Harrington	280 93		
A. J. Littlefield & Co.	791 76		
A. J. Lovell & Co.	112 58		
McPherson Bros.	806 93		
Walter Nash	1,632 26		
Fred. D. Norton	469 40		
Sands, Page & Taylor	370 80		
Utley & Boynton	277 18		
S. P. Worthley	166 60		
Sundry parties	566 25		
		7,178 27	
Telephone, rent and tolls		52 50	
Use of barge, fireworks, etc., on July 4, 1890		10 44	
		20,522 05	

Farm and Ledge.

For canvas covers, A. Erickson .		16 75		
Hay and grain		110 65		
Hardware, tools and repairs:—				
Edward Fitzgerald .	106 55			
Sundry parties . . .	23 00			
		129 55		
Amount carried forward . .		256 95	20,522 05	$28,263 15

Amounts brought forward . . .		$256 95	$20,522 05	$28,263 15
For hose		14 10		
Hot-bed sashes, Cutter & Parker		185 00		
Labor on farm		1,437 02		
Labor on ledge		2,652 75		
Lumber		69 64		
Manure		854 27		
Plants, seeds, etc.:—				
Schlegel and Fottler . .	119 63			
Parker & Wood . . .	4 90			
W. A. Bock	5 80			
		130 33		
Powder, Geo. H. Sampson . .		222 94		
Pigs		81 25		
Rent of market stand		40 00		
Rope matting, Cheney, Upham & Co.		13 72		
Second hand sleigh, Michael Collins		40 00		
Teaming		13 61		
			6,011 58	
Total				$26,533 63
Balance unexpended, . .				$1,729 52

Pauper Department, House Offal.

Appropriation		$18,500 00
Surplus receipts		386 33
		18,886 33

RECEIVED.

For house offal sold to sundry parties	7,386 33	

EXPENDED.

For buckets, C. D. Wilder & Son			12 00	
Disinfectants, C. W. Lerned & Co.			28 72	
Hardware, etc.			42 67	
Harness and repairs:—				
F. Ivers & Son		94 75		
Wm. Mitchell		48 50		
Dyer, Rice & Co.		37 20		
Sundry parties		22 00		
			202 45	
Amounts carried forward . . .			$285 84	$18,886 33

Amounts brought forward . . .		$285 84	$18,886 33
For hay, grain and straw:—			
Clark Bros.	1,582 23		
E. H. Luke & Son	148 60		
W. B. Nelson	17 20		
Geo. G. Wright	217 00		
		1,965 03	
Horse, Welch & Hall		180 00	
Horseshoeing:—			
Wm. Bell	216 70		
J. W. Gerry	67 19		
		283 89	
Labor of employés		14,671 00	
Lumber, Geo. W. Gale		62 34	
Veterinary surgeons and medicines		86 75	
Wagon repairs:—			
R. E. Easter	278 01		
J. A. Henderson & Co.	69 69		
James Miller	162 20		
		509 90	
			18,044 75
Balance unexpended,			$841 58

Pauper Department, Outside Aid.

Appropriation		$32,500 00
Surplus receipts		159 22
		32,659 22
Transferred to Pauper Dept., Salary of Assistant City Physician,		150 00
		32,509 22

RECEIVED.

For aid to, board and burial of paupers:—		
By cities, towns and individuals	2,960 00	
Commonwealth of Massachusetts	1,196 93	
Rebate on bill	2 29	
	4,159 22	

EXPENDED.

For salaries:—			
Visitor, V. Danforth	1,500 90		
Secretary, D. P. Muzzey . . .	1,457 70		
Clerk, Addie M. Benson . . .	468 00		
Amounts carried forward . . .		$3,426 60	$32,509 22

Amounts brought forward . . .		$3,426 60	$32,509 22
Ambulance fees, Chas. W. Dailey		44 00	
Board of children		1,676 07	
Burial of paupers		276 00	
Care of sick, insane and feeble-minded at			
Boston City Hospital	4 00		
Cambridge Hospital	11 00		
Carney Hospital	252 00		
Children's Hospital	95 75		
Danvers Lunatic Hospital . . .	2,727 50		
Mass. School for Feeble-Minded	759 80		
Northampton Lunatic Hospital .	169 46		
Taunton Lunatic Hospital . . .	571 41		
State Almshouse	284 80		
State Farm	219 20		
Westborough Insane Hospital .	2,806 58		
Worcester Insane Hospital . .	2,369 73		
Worcester Lunatic Hospital . .	6,165 99		
		16,436 72	
Clothing, bedding, etc.:—			
Jordan, Marsh & Co.	111 78		
Sheldon Bros.	606 96		
Sundry parties	78 15		
		796 89	
Fuel :—			
H. Wellington & Co.	1110 90		
Coleman Bros.	426 06		
Sundry parties	12 10		
		1,549 06	
Medical attendance and nurse hire		74 00	
Medical supplies, surgical instruments, etc.		190 17	
Relief of paupers by cities, towns and individuals		3,594 92	
Subsistence supplies :—			
J. A. Holmes & Co.	347 05		
McPherson Bros.	186 34		
H. N. Hovey & Co.	133 75		
Clark Bros.	398 00		
Cobb, Bates & Yerxa	115 85		
D. H. Dean	53 00		
Sundry parties	29 04		
		1,263 03	
General expenses:—			
Directories	28 50		
Expressage	2 50		
Gas, Cambridge Gas Light Co. . .	122 26		
Amounts carried forward . . .	$153 26	$29,327 46	$32,509 22

Amounts brought forward . .		153 26	$29,327 46	$32,509 22
Money expended for sundries, D. P. Muzzey		70 46		
Repairs		43 54		
Stationery, postage, printing, etc.:—				
Thorp, Adams M'f'g Co. .	111 40			
F. W. Barry, Beale & Co. .	45 70			
John Ford & Son., ...	40 75			
J. H. H. McNamee . . .	59 50			
Geo. H. Richter	44 20			
Sundry parties	50 06			
		351 61		
Telephone, rent and tolls. . . .		107 30		
Travelling expenses:—				
V. Danforth	139 73			
Charles Walker	7 85			
West End Railway Co. . .	150 00			
		297 58		
Typewriter, Hammond Typewriter Co.		92 25		
Witness, John McNamee		4 00		
			1,120 00	
				$30,447 46
Balance unexpended,				2,061 76

Pauper Department, Salary of Assistant City Physician.

Appropriation	$1,250 00
Transferred from Pauper Department, Outside Aid	150 00
	$1,400 00

EXPENDED.

For salary, Dr. L. L. Bryant . .	1,395 85
Balance unexpended,	4 15

Police Department.

Appropriation	$96,000 00
Surplus receipts	285 72
	96,285 72

RECEIVED.

For cloth for uniforms.	690 45	
Court fees and fines	4,308 27	
Horse	200 00	
Amounts carried forward . . .	$5,198 72	$96,285 72

Amounts brought forward . . .	$5,198 72		$96,285 72
For old wagon	60 00		
Transportation of prisoners . .	4 50		
Witness fees	22 50		
	5,285 72		

EXPENDED.

For salaries:—			
Chief, L. J. Cloyes.	1,700 00		
Captains, Thos. J. Lucy . . .	1,248 00		
M. J. Folsom	1,248 00		
J. F. Murray	1,248 00		
Court officer, Wm. F. Batchelder	1,186 25		
Inspectors, L. J. Ducey . . .	1,186 25		
A. S. Harriman	1,186 25		
Sergeants	7,602 00		
Patrolmen	67,594 32		
Matrons	624 00		
		$84,823 07	
Accident case		10 00	
Badges, buttons, etc.		75 50	
Bedding		56 25	
Cleaning stations		150 45	
Cloth for uniforms, Wendell, Fay & Co.		360 57	
Directories		22 00	
Disinfectant		13 50	
Food for prisoners		83 50	
Gas, Cambridge Gas Light Co. .		727 53	
Hardware and supplies		51 29	
Horses:—			
Feed for and board of	590 42		
Purchase of :—			
Albert H Bowden	250 00		
Edgar Snow & Co.	250 00		
Shoeing	49 27		
Harness and supplies	183 65		
Carriage, Chas. Waugh & Co. .	250 00		
Carriage hire	25 50		
Carriage repairs	104 50		
Patrol wagon, Chas. Waugh & Co.	433 25		
		2,136 59	
Ice		32 31	
Medical expenses		37 80	
Photographs		7 00	
Amounts carried forward . . .		$88,587 36	$96,285 72

Amounts brought forward . . .		$88,587 36	$96,285 72
Police telephone and signal telegraph:—			
Gamewell F. A. Tel. Co. . . .	5,052 50		
Supplies	85 40		
		5,137 90	
Repairs and alterations		524 58	
Stationery and printing		120 46	
Strapping billies, etc.		7 58	
Telephone, rent and tolls		119 10	
Travelling expenses		280 67	
Washing		20 15	
Sundries		74 57	
			94,872 37
Balance unexpended,			$1,413 35

Public Property (City Buildings, Care and Repairs).

Appropriation		$12,000 00
Transferred to Public Property, Incidentals . . .	28 52	
" " " " Putnam Sch. Ho. .	226 21	
		254 73
		11,745 27

RECEIVED.

For rent of :—		
Armories, Com. of Mass. . . .	800 00	
District Court room, County of Middlesex	350 00	
Office and shop, Cambridge Water Works	600 00	
Tenements, firemen	100 02	
Halls	12 00	
	1,862 02	

EXPENDED.

City Hall.			
For care of building:—			
Janitor, Chas. A. Gay . . .	1,198 60		
Assistants	595 29		
		1,793 89	
Fuel:—			
Thompson Baker Coal Co. . .	175 50		
Horatio Wellington & Co. . .	151 20		
		326 70	
Amounts carried forward . . .		$2,120 59	$11,745 27

Amounts brought forward . .		$2,120 59		$11,745 27
Furniture:—				
Phillips Bros. & Co.	185 50			
Sundry parties	120 51			
		306 01		
Lighting:—				
Cambridge Electric Light Co.	210 00			
Cambridge Gas Light Co. . .	390 64			
		600 64		
Repairs and alterations:—				
Carpentry	63 80			
Heating apparatus	42 53			
Painting, etc.	23 90			
Plumbing	15 19			
		145 42		
Supplies:—				
Hardware, tools, etc. . . .	29 09			
Ice	121 80			
Sundries	120 06			
		270 95		
			3,443 71	
Ward One Building (occupied for fire and police purposes, armory and the District Court).				
For care of building:—				
Janitor, Chas. Munroe . . .		1,248 00		
Repairs and alterations:—				
Brock Bros.	99 58			
I. P. Estes	132 57			
J. Sewell & Co.	124 08			
W. A. Snow & Co. . . .	95 15			
Sundry parties	177 39			
		628 77		
Fuel:—				
Richardson & Bacon . . .	610 50			
H. Wellington & Co. . . .	201 60			
Weighing coal	6 18			
		818 28		
Lighting:—				
Cambridge Electric Lt. Co.	256 00			
Lambridge Gas Light Co. .	625 09			
		881 09		
Sundry supplies			50 10	
			3,626 24	
Ward Two Building (Engine House No. 5, Inman Square):—				
For repairs and alterations . .			69 63	
Amounts carried forward . .			$7,139 58	$11,745 27

Amounts brought forward . . .			$7,139 58	$11,745 27
Ward Three Building (Police Station No. 3, Engine No. 3 and Ward Room).				
For care of rooms, L. H. Dale .		40 00		
Repairs and alterations . . .		123 52		
			163 52	
Ward Four Building (occupied by the Fire, Lamp, Police and School Departments, Overseers of the Poor, Associated Charities, Armory and Ward Room).				
For care of building:—				
Janitor, Geo. D. Brown . .		1,198 60		
Repairs and alterations:—				
Levi Hawkes	66 69			
S. C. Higgins	463 85			
Joy and Hall	51 13			
Wm. H. Norris	130 07			
J. H. and J. P. Thayer & Co.	95 72			
Elisha Tripp	94 72			
Sundry parties	30 71			
		932 89		
Fuel, H. Wellington & Co. .	464 00			
Weighing coal	7 00			
		471 00		
Lighting, Cambridge Gas Light Co.		334 60		
Sundry supplies		54 86		
			2,991 95	
Ward Five Building (Engine No. 4, Police Station No. 5 and Ward Room):—				
For care of ward room, J. E. Ricker		50 00		
Repairs and alterations . . .		176 36		
Furniture		48 00		
Gas		7 82		
Sundry supplies		9 40		
			291 58	
Engine House No. 2, Main street:—				
Repairs and alterations			125 18	
Hook and Ladder House No. 2, Portland street:—				
Repairs and alterations			45 51	
Bath House:—				
For care of building, Fred. Clover		280 00		
Amounts carried forward . . .		$280 00	$10,757 22	$11,745 27

Amounts brought forward . . .	$280 00	$10,757 22	$11,745 27
Moving building	52 50		
Supplies	52 90		
		385 40	
			$11,142 62
Balance unexpended,			$602 65

Public Property Incidentals.

Appropriation			$1,000 00
Surplus revenue			2 00
Transferred from incidental expenses		600 00	
City buildings care and repairs .		28 52	
			$628 52
			$1,630 52

RECEIVED.

Rebate on bill	$2 00		

EXPENDED.

For Board and care of Superintendent of Buildings:—			
Horse and carriage		$404 55	
Expenses of Committee on Public Property:—			
Carriage hire	$69 50		
Refreshments	20 00		
Travelling expenses	9 25		
		98 75	
Care and repair of clocks . . .		189 78	
Care and repair of flags and flagstaffs		51 39	
Care and repair of rifle range . .		741 21	
Typewriter, George H. Richter & Co.		110 00	
Sundries		34 84	
			$1,630 52

Public Property, New City Hall (Furnishings).

Appropriation			$10,000 00

EXPENDED.

For furniture and carpets:—			
Derby & Kilmer Desk Co. . . .		$300 00	
Joel Goldthwait & Co.		242 81	
Keeler & Co.		2,617 00	
			3,159 81
Balance unexpended . .			$6,840 19

New Engine House and Land.

Appropriation		$17,000 00
Transferred from Fire Department		400 00
		$17,400 00

EXPENDED.

For Land, Charlotte A. C. Hayes . .	$3,500 00	
Examination of title, Wm. V. Thompson	35 00	
Contract for building, John Quin .	2,500 00	
Plans, George Fogerty	200 00	
Sundries	35 95	
		$6,270 95
Balance unexpended . .		$11,129 05

School Houses, Care and Repairs.

Appropriation		$39,000 00
Surplus receipts		87 90
		$39,087 90
Transferred to School Department Salaries		2,516 52
		$36,571 38

RECEIVED.

For fuel	$83 73	
Iron	4 17	
	$87 90	

EXPENDED.

For alterations and repairs:—		
W. H. Norris	$1,976 69	
F. B. Furbish	296 40	
Samuel McCulloch	84 98	
S. C. Higgins	510 25	
Charles H. Milner	97 00	
J. M. Price & Son	294 66	
J. L. P. Ackers	253 00	
W. R. Alden	242 50	
W. B. Holt	152 31	
J. H. & J. P. Thayer & Co. . .	709 07	
Walworth M'f'g. Co.	129 85	
Brock Bros.	140 82	
William H. White	121 45	
D. J. Wild & Co.	169 00	
McGahey & Byrne	75 00	
Austin Ford	375 00	
Sundry parties	1,395 04	
		$7,023 02
Amounts carried forward . . .	$7,023 02	$36,571 38

Amounts brought forward . . .		$7,023 02	$36,571 38
Blackboards:—			
George S. Perry	$50 96		
J. A. Swasey	604 00		
		654 96	
Clocks and repairs		85 00	
Disinfectants		37 00	
Expressage and moving furniture .		143 00	
Flag-staffs, labor and fittings . .		558 70	
Fuel:—			
Coleman Bros.	$178 69		
Hunnewell & Proudfoot . . .	183 95		
Richardson & Bacon	226 35		
Wellington & Buck	117 00		
Horatio Wellington & Co. . . .	8,697 50		
Weighing, George L. Mitchell .	107 25		
		$9,510 74	
For furniture and furnishings:—			
James Furfey	$238 16		
A. G. Whitcomb	434 10		
Sundry persons	231 34		
		$903 60	
Janitors		13,972 41	
Lighting:—			
Cambridge Electric Light Co. .	$739 33		
Cambridge Gas Light Co. . . .	636 30		
		1,375 63	
Removing night soil:—			
R. M. Johnson		260 00	
Rent, St. John's Literary Institute		1,000 00	
Supplies, including brooms, brushes, etc.:—			
Charles W. Trainer & Co. . . .	$251 25		
Charles A. Austin & Co. . . .	275 40		
Sundry parties	441 14		
		$967 79	
			$36,491 85
Balance unexpended . .			$79 53

Public Property, New High School House.

Appropriation			$195,345 65
EXPENDED.			
Contractors:—			
Architects, Chamberlin & Austin	$4,918 45		
Building, J. E. Giddings & Son .	86,991 40		
Filling land, John Galvin . . .	1,388 00		
		$93,297 85	
Amounts carried forward . . .		$93,297 85	$195,345 65

Amounts brought forward . . .		$93,297 85	$195,345 65
Inspector, Charles H. Stuart . . .		1,045 00	
Printing		2 50	
			94,345 35
Balance unexpended . .			$101,000 30

Public Property, New School House in Ward Four.

Appropriation			$55,000 00
Additional appropriation			19,900 00
			$74,900 00

EXPENDED.

For contract for building:—			
Donahoe Brothers		$24,000 00	
Architect, George Fogerty . . .		1,300 00	
Printing		24 65	
Water supply		30 72	
			$25,355 37
Balance unexpended . .			$49,544 63

New Putnam School House.

Appropriation			$30,600 00
Transferred from Incidental Expenses		$1,800 00	
City buildings, care and repairs .		226 21	
			$2,026 21
			$32,626 21

EXPENDED.

Architect George Fogerty . . .		$749 00	
Blackboards, J. A. Swasey . . .		225 00	
Contract for building:—			
D. Sullivan & Son	$24,657 00		
W. B. Stinson	69 23		
		24,726 23	
Clocks, Simon Flaig		43 50	
Furniture and furnishings:—			
Winchester Furniture Co. . . .	$1,301 64		
A. G. Whitcomb	252 00		
James Furfey	77 62		
F. P. Snyder	175 50		
		1,806 76	
Amounts carried forward . . .		$27,550 49	$32,626 21

Amounts brought forward . . .	$27,550 49	$32,626 21
Gates and fences, Chelmsford Foundry Co.	75 00	
Gas fittings, etc.	119 15	
Hardware, etc.	84 46	
Heating and ventilating apparatus, Smead Warming & Ventilating Co.	4,750 00	
Water supply	47 11	
		$32,626 21

Salaries.

Appropriation	$26,950 00
Transferred from School Department T. B. & S.	187 51
	$27,137 51

RECEIVED.

From Cambridge Water Works for services of City Solicitor . .	$1,500 00

EXPENDED.

For salaries of:—		
Mayor, Henry H. Gilmore . . .	$2,500 00	
City Treasurer and Treasurer of Sinking Funds, William W. Dallinger	3,300 00	
City Clerk, Walter W. Pike . .	2,800 00	
Assistant City Clerk, Edward J. Brandon	1,000 00	
Clerk of Common Council, Edward J. Brandon	300 00	
Auditor, Harry T. Upham . . .	2,050 00	
Assessors:—		
Joshua G. Gooch	1,500 00	
Joseph Whittemore	1,500 00	
Andrew J. Green	1,500 00	
City Solicitor, Chas. J. McIntire	2,500 00	
Clerk of Committees, John McDuffie	2,400 00	
City Messenger, Francis L. Pratt	1,800 00	
Superintendent of Buildings, Benjamin H. Steele . . .	1,750 00	
Sealer of Weights and Measures, B. Otis Danforth	350 00	
Amounts carried forward . . .	$25,250 00	$27,137 51

Amounts brought forward . . .		$25,250 00	$27,137 51
Inspector of Milk and Vinegar, Frank A. Dunbar		600 00	
Inspector of Wires, Charles H. Morse		187 51	
Probation Officer, Fred. W. Hagar		1,000 00	
Harbor Master, Wm. J. Marvin .		100 00	
			$27,137 51

School Department, Incidental Expenses.

Appropriation			$700 00
EXPENDED.			
For advertising and printing, etc. .		$117 40	
Car-tickets, West End Street Railway Co.		95 00	
Clerical assistance, Francis Cogswell		25 00	
Salaries:—			
Secretary of school committee, S. B. Hubbard	$300 00		
Page to school committee, A. W. Chamberlain	25 00		
		325 00	
Statistics of private schools, S. B. Hubbard		6 00	
Travelling expenses, etc., Francis Cogswell		43 65	
			$612 05
Balance unexpended . .			$87 95

School Department, Salaries.

Appropriation		$191,000 00
Surplus receipts		360 69
Transferred from school houses, care and repairs		2,516 52
		$193,877 21
RECEIVED.		
For Hopkins Fund Income . . .	$712 69	
Tuition of non-resident pupils .	648 00	
	$1,360 69	
Amount carried forward . . .		$193,877 21

Amount brought forward . . .			$193,877 21

EXPENDED.

For salaries of:—			
Superintendent, Francis Cogswell		$3,000 00	
Agent, Sanford B. Hubbard . .		1,500 00	
Special instructors:—			
Drawing, Walter F. Brackett .		1,700 00	
Music, Nathan Lincoln . . .		1,700 00	
Sewing, Agnes Gordon . . .		480 00	
Sewing, Georgie Jones . . .		480 00	
Instructors in:—			
Latin school	$12,857 41		
English High school	17,712 50		
Grammar schools	77,584 95		
Primary schools	62,682 85		
Training school	5,885 00		
Kindergarten schools	2,040 00		
Evening schools	3,319 00		
Substitutes	235 50		
		$182,317 21	
Truant officers		2,700 00	
			$193,877 21

School Department, Text Books and Supplies.

Appropriation		$16,000 00
Transferred to Salaries		187 51
		15,812 49

RECEIVED.

For damage to and sale of books and supplies	$244 53	

EXPENDED.

For apparatus and supplies:—		
G. F. King and Merrill	92 42	
Whitall, Tatum & Co.	45 67	
Geo. S. Perry	527 77	
D. C. Pratt	180 75	
Prang Educational Co.	1,018 15	
Winkley, Dresser & Co. . . .	145 06	
Frost & Adams	203 95	
Pulsifer, Jordan & Pfaff. . . .	1,856 06	
Amounts carried forward . . .	$4,069 83	$15,812 49

Amounts brought forward . . .	$4,069 83		$15,812 49
Eimer and Amend	40 85		
J. L. Hammett	139 86		
E. S. Ritchie & Sons	591 70		
Educational Supply Co. . . .	61 81		
Davidson Rubber Co.	40 60		
Wilson, Larrabee & Co. . . .	33 04		
Burditt & Williams	68 37		
Weeks and Potter	50 61		
C. H. Codman & Co.	75 57		
S. B. Hubbard.	133 39		
W. S. Hill	141 50		
Boston School Supply Co. . . .	488 29		
Sundry parties	478 54		
		6,413 96	
For Books:—			
Ginn & Co.	1,073 65		
Harper & Bros.	195 05		
D. C. Heath & Co.	447 06		
Houghton, Mifflin & Co. . . .	274 13		
Harrison Hume, Agent . . .	238 89		
American Book Co.	2,152 33		
Interstate Publishing Co. . . .	226 32		
J. B. Lippincott & Co.. . . .	667 97		
Lee & Shepard	269 72		
Carl Schoenhof	114 50		
Wm. Ware & Co.	931 31		
A. J. Johnson & Co.	360 00		
Leach, Shewell & Sanborn . .	57 35		
Thompson, Brown & Co.. . . .	665 99		
Eldredge & Bros.	83 80		
Sundry parties	310 14		
		8,068 21	
Book covers		211 80	
Joseph Watrous	72 00		
Weaver Printing & M'f'g Co. .	62 18		
		134 18	
Car tickets, West End St. R'y Co.		10 00	
Diplomas		90 48	
Directories		7 50	
Exhibition expenses, Frank A. Hill		16 89	
Expressage and freight		257 89	
Printing:—			
John Ford & Son	95 05		
G. B. Lenfest	166 55		
Amounts carried forward . . .	$261 60	$15,210 91	$15,812 49

Amounts brought forward . .	$261 60	$15,210 91	$15,812 49
Rockwell, Churchill & Co. . .	155 67		
Sundry parties	20 25		
	— —	437 52	
Tuning pianos, L. Marchant Eldridge		12 50	
Typewriting, Harold G. Barnes		7 80	
			15,668 73
Balance unexpended,			143 76

Sewers, Construction.

Appropriation	$25,000 00

RECEIVED.

For assessments	12,790 87	
Building catch-basin	71 94	
Cement	2 44	
Damage to pipe	11 44	
	12,876 69	

EXPENDED.

For materials.			
Bricks:—			
Hobbs, Glidden & Co. . . .	399 23		
W. C. Norcross	665 82		
		1,065 05	
Cess pool curbs and stones:—			
John J. Cuddihy	300 00		
Austin Ford	67 80		
S. & R. J. Lombard	105 10		
		472 90	
Drain-pipe, sand and cement:—			
D. W. Lewis	4,121 31		
Geo. M. Winslow & Co. . .	184 95		
Sundry parties	36 00		
		4,342 26	
Lumber:—			
E. D. Sawyer & Co.	239 51		
Sundry persons	26 41		
		265 92	
Manhole covers and iron work:—			
W. O. Barbour & Co. . . .	796 39		
Barbour, Stockwell & Co. . .	91 37		
		887 76	
Piles, John T. Scully		117 04	
Amounts carried forward . . .		$7,150 93	$25,000 00

Amounts brought forward . .		$7,150 93	$25,000 00
For Tools and repairs		106 03	
Sundries		22 10	
		7,279 06	
Labor, as per pay rolls . .	8,651 50		
Carpentry	46 02		
		8,697 52	
Teaming:—			
P. Biggin	97 33		
J. F. Coolidge	174 76		
Thomas O'Hara	372 75		
Sundry parties	176 07		
		820 91	
General expenses:—			
Carriage hire for committee . .	5 00		
Refund of sewer assessments . .	110 44		
		115 44	
			16,912 93
Balance unexpended,			$8,087 07

Sewers, Construction—Belmont System.

Appropriation				$14,000 00
Transferred to sewers, maintenance				8,169 31
				$5,830 69

EXPENDED.

For Labor, as per pay rolls		$4,420 61		
Teaming, Thomas O'Hara		122 50		
Sundry parties . . .		81 26		
			$4,624 37	
Materials				
Bricks:—				
Hobbs, Glidden & Co.	$435 26			
Wm. C. Norcross	316 17			
		$751 43		
Drain pipe, sand and cement:—				
D. W. Lewis . .	249 37			
Sundry parties .	22 00			
		$271 37		
Lumber, E. D. Sawyer & Co. . . .		122 80		
Sundry supplies .		60 72		
			1,206 32	
				$5,830 69

Sewers, Maintenance.

Appropriation			$26,000 00
Transferred from sewers, construction—Belmont System . . .			8,169 31
			$34,169 31

RECEIVED.

For cleaning Bridge st. sewer:—			
City of Somerville .		$1,304 24	
West End Street Railway Co. . .		36 25	
Labor and materials .		516 56	
		$1,857 05	

EXPENDED.

For Labor, as per pay rolls		12,416 76	
Sundry parties . .		26 70	
Carpentry, J. H. Keenan	451 15		
G. H. Byron . . .	12 66		
		463 81	
Cleaning catch basins:—			
John Horrigan .		1,900 50	
Dredging Bridge Street sewer:—			
N. E. Dredging Co.		1,993 20	
Paving, West End St. Railway Co.		248 11	
Repairs of tools, machines, etc.:—			
James Maitland .	105 16		
Sundry parties . .	188 43		
		293 59	
Teaming:—			
P. Biggin	181 17		
Thos. O'Hara . .	492 75		
John Quinn . . .	146 00		
Sundry parties . .	96 02		
		915 94	
			18,258 61
Materials.			
Bricks:—			
Wm. C. Norcross	1,181 28		
Hobbs, Glidden & Co.	25 11		
		1,206 39	
Amounts carried forward . . .		$1,206 39	$18,258 61 $34,169 31

Amounts brought forward . . .		$1,206 39	$18,258 61	$34,169 31
Cess-pool stones:—				
Austin Ford . .	831 79			
Sundry persons .	40 00			
		871 79		
Drain pipe, sand and cement:—				
D. W. Lewis . .	1,786 84			
Portland Stone Ware Co. . .	36 45			
Geo. M. Winslow & Co. . . .	294 30			
Sundry parties .	103 75			
		2,221 34		
Lumber, lime, etc.:—				
Geo. W. Gale .	208 65			
J. H. Keenan .	273 20			
E. D. Sawyer & Co.	584 82			
		1,066 67		
Manhole covers and iron work:—				
W. O. Barbour & Co.	169 88			
Barbour, Stockwell & Co. . .	17 62			
		187 50		
Tools, hardware, iron and general supplies:—				
Burditt & White . .	151 77			
Boston Woven Hose Co.	138 39			
E. R. Cheney . . .	126 37			
Conant Rubber Co.	295 75			
J. H. Houghton . .	164 10			
Nolan Bros. . . .	131 66			
A. C. Richmond . .	41 50			
Sundry parties . .	191 94			
		1,241 48		
			6,795 17	
Stable expenses:—				
Clipping horses . .		6 00		
Feed for horses:—				
E. H. Luke & Son		251 54		
Harnesses, vehicles and repairs:—				
F. Ivers & Son . .	293 45			
John Hancock . .	28 40			
		321 85		
Amounts carried forward . . .		$579 39	$25,053 78	$34,169 31

Amounts brought forward . . .		$579 39	$25,053 78	$34,169 31
Horse shoeing . . .		60 93		
Veterinary surgeons and medicines .		32 50		
			672 82	
General expenses:—				
Salary of Supt., T. L. Pike		1,700 00		
Carriage hire for committee		15 00		
Desks for office . .		94 00		
Displacement of tide-water		43 45		
Fuel		74 61		
Gas		12 00		
Stationery and print'g		39 50		
Sundries		29 90		
Use of land:—				
Albert J. Cook . .	50 00			
A. L. Russell . .	100 00			
		150 00		
Water supply . . .		154 65		
			2,313 11	
				28,039 71
Balance unexpended				$6,129 60

Sinking Funds.

Appropriation	$66,380 00

EXPENDED.

For amount due the Commissioners of Sinking Funds . .	66,380 00

State Aid.

Appropriation	$16,600 00
Additional Appropriation	3,000 00
Surplus receipts	263 25
	$19,863 25
Transferred to Stationery and Printing	79 41
	$19,783 84
Amount carried forward . .	$19,783 84

Amount brought forward . .			$19,783 84
RECEIVED.			
From Commonwealth of Massachusetts, reimbursement .	$10,633 50		
Town of Medfield, reimbursement .	72 00		
Money not called for on pay rolls .	157 75		
	$10,863 25		
EXPENDED.			
For military aid, as per pay rolls .	$10,173 50		
Indigent aid, as per pay rolls . .	3,936 00		
Soldiers and Sailors' aid, as per pay rolls	4,051 50		
Burial of Soldiers and Sailors . .	451 50		
Supplies for Soldiers and Sailors .	105 32		
		$18,717 82	
General expenses:—			
Salary of clerk, Chas. L. Russell.		780 00	
Carriage hire for committee . .		6 00	
Printing		15 50	
			19,519 32
Balance unexpended,			264 52
Stationery and Printing.			
Appropriation			$4,500 00
Transferred from incidental expenses		$500 00	
State aid		79 41	
			579 41
			$5,079 41
EXPENDED.			
For Stationery, printing, etc.:—			
Cashman, Keating, & Co., City Documents	$989 54		
Revised Ordinances	713 78		
Sundries	36 50		
		$1,739 82	
Cotton & Gould, supplies . . .		349 17	
James Cox, advertising		253 31	
James H. Cox, printing		435 40	
John Ford & Son, printing . .		314 25	
Amounts carried forward . . .		$3,091 95	$5,079 41

Amounts brought forward . . .		$3,091 95	$5,079 41
Harvard Printing Co.		360 25	
E. W. S. Jones, account books .		174 55	
J. H. H. McNamee, book-binding		129 25	
Charles Walker, examination of bills		15 00	
John Wilson & Son, printing . .		113 50	
Winkley, Dresser & Co., postage and supplies		1,129 77	
Sundry parties, supplies . . .		65 14	
			$5,079 41

Street Department, Bridges.

Appropriation			32,000 00
EXPENDED.			
For advertising and printing . . .		43 17	
Damage to vessel going through Boylston Street draw-bridge, Samuel Lindsey		447 56	
Draw-tenders.		2,243 93	
Electric lighting		45 00	
Repairs and alterations:—			
Sixth St. Bridge, John P. Perkins & Son	2,980 00		
Letterney & Co.	100 00		
		3,080 00	
River St. Bridge, Alex. McInnis .		4,725 00	
Supplies:—			
Geo. W. Gale	148 33		
N. N. Stickney	48 96		
Sundry parties	16 48		
		213 77	
			10,798 43
Balance unexpended, . .			$21,201 57

Street Department, Extension and Widening [Brattle Street].

Appropriation.			$2,499 36
Transferred from Incidental Expenses			275 25
			2,774 61
EXPENDED.			
For land and damage:—			
Sarah W. Brooks	300 00		
John C. Gray	2,000 00		
Mary J. McMulkin	425 00		
		2,725 00	
Moving fountain		49 61	
			2,774 61

Street Department, Extension and Widening [Charles River Street].

Appropriation	$1,000 00

EXPENDED.

For land and damage:—	
Hycent Purcell	958 00
Balance unexpended,	42 00

Street Department, Extension and Widening [Front Street].

Appropriation	4,776 55
Additional appropriation	5,000 00
Transferred from Front St., filling and grading	6,521 97
	16,298 52

EXPENDED.

For land and damage:—		
Henry G. Ames	2,100 00	
Josiah M. Brooks	2,400 00	
Fanny Coleman *et al.*	2,892 60	
Emma W. Bailey, *et al.*	1,900 00	
Edw. Woodman and W. B. Stevens	4,693 49	
		13,986 09
Balance unexpended,		$2,312 43

Street Department, Maintenance (including the Collection of Ashes).

Appropriation	$110,000 00
Surplus receipts	751 57
	$110,751 57

RECEIVED.

For Ashes, scrapings and filling .	$1,892 35	
Chopping-blocks	17 50	
Grading driveway at Public Library	39 75	
Labor and materials	401 89	
Manure	327 50	
Old materials	40 22	
Storing coal	28 08	
Sundries	4 28	
	$2,751 57	
Amount carried forward . . .		$110,751 57

Amount brought forward			$110,751 57

EXPENDED.

For Salaries:—			
Supt. John McSorley, from Dec. 1, 1889, to Apr. 2, 1890 . .	$575 94		
E. H. Reed, from Apr. 3, 1890, to Dec. 1, 1890	1,124 06		
Foremen, C. A. Brown	431 40		
J. A. Sheridan . . .	736 44		
Sub-Foremen, H. C. Hitchcock .	361 88		
E. Osborn . . .	450 00		
Supt's. clerk, George M. Clukas .	850 00		
Laborers, as per pay rolls . . .	60,728 30		
		$65,258 02	
Teaming other than done by the department:—			
John Brassil	$113 75		
Timothy Bresnihan	62 50		
Mary Burns	58 75		
Peter Burns	626 25		
C. S. Brainard	743 75		
James Boyle	238 00		
Michael Collins	607 50		
Timothy A. Callaghan . . .	702 50		
Jane Cosgrove	62 50		
Timothy C. Cosgrove	157 50		
William Condon	338 75		
Elizabeth Cox	343 75		
P. J. Curley	181 25		
P. H. Dardis	571 25		
John Doody	133 75		
Michael J. Egan	207 50		
Joseph Finnick	467 50		
John Galvin	543 75		
William Hart	616 25		
M. F. Lamb	280 00		
Charles Linehan	395 00		
Edward Lynch	640 00		
Jeremiah McCrehan	582 50		
Charles McMahon	487 50		
Patrick McNamara	451 25		
Thomas McSorley	505 75		
Timothy Murphy	526 25		
Thomas H. O'Hara	528 75		
Amounts carried forward . . .	$11,173 75	$65,258 02	$110,751 57

Amounts brought forward . . .	$11,173 75	$65,258 02	$110,751 57
Michael O'Sullivan	652 50		
John Quinn	578 75		
John M. Riley	625 00		
Patrick Riley	105 00		
John T. Scully	95 00		
Michael J. Shea	632 50		
Jeremiah Sullivan	627 50		
Peter Tumilty	467 50		
Joseph F. White	108 75		
Thomas O'Hara	42 50		
Henry Hermanns	382 50		
D. J. Cosgrove	433 75		
James H. Burns	75 00		
T. F. Cosgrove	22 50		
James Culhane	106 25		
John A. Egan	165 75		
Robert Ross	60 00		
		16,354 50	
Fuel:—			
Coleman Bros.	96 00		
Thompson & Baker Coal Co. .	196 50		
H. Wellington & Co. . . .	296 50		
Sundry parties	148 84		
		737 84	
Gravel and screenings:—			
Charles Linehan	310 50		
Thomas O'Hara	82 50		
		393 00	
For hardware, tools, machinery and repairs:—			
Bigelow & Dowse	121 82		
Burditt & White	124 70		
Brock Bros.	84 09		
Dodge, Haley & Co.	236 88		
Wm. C. Oastler	77 00		
Chas. E. Brigham	147 59		
Ames Plow Co.	421 87		
Farrell Foundry and Machine Co.	148 82		
Miller & Shaw	63 29		
Edson Manufacturing Co. . .	109 65		
Sundry parties	205 31		
		1,741 02	
Horses, feed for:—			
Hosmer, Crampton & Hammond . .	1,810 81		
Geo. G. Wright .	540 70		
Am'ts carried forward	$2,351 51	$84,484 48	$110,751 57

Am'ts brought forward	$2,351 51		$84,484 48	$110,751 57
A. F. Whitcomb .	1,498 04			
Sundry parties . .	74 70			
		3,924 25		
Purchase and exchange:—				
J. C. Richardson	525 00			
J. P. Scroggs . .	225 00			
		750 00		
Hire, C. S. Brainard		11 00		
Shoes and shoeing		157 26		
Veterinary surgeon and medicines:—				
W. Ferguson . .	135 50			
Rust, Richardson Drug Co. . .	91 43			
Sundry parties .	15 88			
		242 81		
Harnesses, wagons and repairs:—				
Hugh McCaffrey .	364 84			
Joseph Cogan . .	65 00			
James Forgie & Son	305 35			
F. L. Chapman .	100 00			
A. M. Wood . .	113 95			
Charles Waugh . .	50 00			
F. Ivers	35 75			
Sundry parties . .	40 94			
		1,075 83		
Stable, repairs and fittings:—				
Abel Stevens . .	326 45			
E. Van Noorden & Co.	371 00			
Howard F. Peak .	80 13			
W. A. Snow & Co.	104 83			
Sundry parties . .	124 51			
		1,006 92		
			7,168 07	
Steam roller, John Post, Jr. . . .			4,000 00	
Stone (cracked):—				
Frank W. Mead, .		8,825 35		
Stone (field):—				
James Boyle . .	96 51			
John Brassil . . .	106 59			
Michael Burns . .	91 98			
T. A. Callaghan .	681 46			
Am'ts carried forward	$976 54	$8,825 35	$95,652 45	$110,751 57

Am'ts brought forward	$976 54	$8,825 35	$95,652 45	$110,751 57
Michael Collins . .	126 72			
D. J. Cosgrove . .	225 24			
Timothy Cosgrove .	76 78			
P. J. Curley . . .	423 82			
Michael J. Egan .	522 62			
Wm. Hart . . .	434 58			
David Irwin . . .	83 56			
John Galvin . . .	208 15			
Edward Lynch . .	127 84			
J. McCrehan . .	155 03			
Thomas O'Hara .	69 94			
Thomas H. O'Hara	51 56			
C. S. Brainard . .	87 53			
Peter Burns . . .	54 95			
Sundry parties . .	375 80			
		4,000 66		
			12,826 01	
Sundry supplies.				
Lumber, lime and cement:—				
John Clary . .	90 30			
Geo. W. Gale . .	693 80			
N. N. Stickney .	284 84			
Sundry parties .	114 74			
		1,183 68		
Oil, paint, etc.:—				
Howe & French	105 44			
Sundry parties .	75 51			
		180 95		
Small supplies . .		70 91		
			1,435 54	
General expenses:—				
Carriage hire for committee .		108 00		
Directories		10 00		
Drain work		22 91		
Expressage and freight . .		4 03		
Gas		203 93		
Stationery and printing . .		240 69		
Street signs		60 35		
Telephone rent and tolls .		54 60		
Sundries		9 30		
Water supply		22 96		
			736 77	
				$110,650 77
Balance unexpended,				100 80

Street Department, Paving (Bridge Street).

Appropriation				$18,000 00
EXPENDED.				
For advertising			16 88	
Paving materials:—				
Blocks, Wight & Scorgie . . .		8,017 04		
Crossing stone, E. F. Cuddihy		1,160 00		
Gravel and sand:—				
P. O'Riorden . .	712 00			
John Turner & Co.	464 36			
		1,176 36		
			$10,353 40	
Labor, as per pay-rolls . .			5,930 15	
Teaming:—				
Wm. Condon	262 50			
Elizabeth Cox	267 50			
Jas. Culhane	146 25			
John A. Egan	228 00			
Patrick McNamara . .	143 75			
Timothy Murphy . . .	90 00			
Thomas O'Hara . . .	90 00			
Sundry parties	434 25			
			$1,662 25	
Use of Wharf			35 00	
				$17,997 68
Balance unexpended,				2 32

Street Department, Paving, Edgestones and Sidewalks.

Appropriation				$19,400 00
Surplus receipts				1,457 16
Transferred from Extension and widening Main Street . . .				1,659 00
				$22,516 16
RECEIVED.				
From sundry persons:—				
For Assessments, ...		9,447 71		
Labor and paving materials .		1,402 95		
Sundries		6 50		
		$10,857 16		
EXPENDED.				
For Advertising			31 50	
Paving materials:—				
Bricks, M. W. Sands		3,400 89		
Amounts carried forward . . .		$3,400 89	$31 50	$22,516 16

Amounts brought forward . .		$3,400 89	$31 50	$22,516 16
Crossing stone, J. J. Cuddihy .		220 00		
Edgestones and circles:—				
John P. Downey . .	656 42			
H. E. Fletcher & Co.	4,577 43			
F. A. Kennedy . . .	20 62			
		$5,254 47		
Round stone and blocks:—				
West End Street R'y Co.	541 53			
Sundry parties . . .	60 79			
		602 32		
Gravel and Sand:—				
Wm. Condon . . .	357 50			
James M. Hilton . .	100 65			
Charles Linehan . .	129 00			
Sundry persons . . .	276 21			
		863 36		
			10,341 04	
Labor as per pay rolls,			10,451 09	
Supplies:—				
Lumber and cement .		35 11		
Oil		72 14		
Rope		22 00		
Tools		48 50		
			177 76	
Teaming, Chas. McMahon			615 43	
Stationery and printing .			19 50	
Sundries			1 65	
				21,637 97
Balance unexpended,				878 19

Street Department, Shade Trees and Public Grounds.

Appropriation	$5000 00
Surplus receipts, ...	113 10
	5113 10

RECEIVED.

For removing trees	113 10	

EXPENDED.

For hardware, tools and repairs .	177 98	
Harness	50 00	
Labor, as per pay-rolls	4,169 01	
Lumber	157 31	
Manure	327 50	
Plants and seeds	121 55	
		5,003 35
Balance unexpended,		109 75

Street Department, Watering.

Appropriation			$18,000 00
Surplus receipts			935 99
			18,935 99

RECEIVED.

From sundry persons:—		
For watering streets	12,922 91	
Damage to cart	13 08	
		12,935 99

EXPENDED.

For salaries of employés:—			
Superintendent of District One—			
John A. Sheridan	362 28		
Superintendent of District Two—			
Charles A. Brown	640 00		
Laborers, as per pay-rolls	639 47		
		1,641 75	
Repairs on watering-carts:—			
Barbour, Stockwell & Co.	109 75		
F. H. Holton & Co.	183 49		
Howe & French	267 59		
Sundry parties	98 51		
		659 34	
Carriage for Supt., F. Ivers & Son		125 00	
Hardware		74 37	
Hose and couplings, Boston Woven Hose Co.		118 45	
Printing		9 50	
Rubber boots		13 50	
Stand-pipes		50 04	
Sundries		15 50	
Teaming by contract:—			
James Boyle	477 45		
John Brassil	816 30		
James H. Burns	820 44		
John F. Coolidge	810 90		
Thomas F. Cosgrove	473 85		
Timothy C. Cosgrove	400 40		
Elizabeth Cox	429 74		
James Coyle	773 33		
Patrick J. Curley	463 76		
P. H. Dardis	459 00		
Amounts carried forward	$5,925 17	$2,707 45	$18,935 99

Amounts brought forward . . .	$5,925 17	$2,707 45	$18,935 99
John Doody	893 54		
John A. Egan	252 68		
William Hart	399 15		
Henry Hermans	362 02		
M. F. Lamb	919 45		
Charles Linehan	651 20		
Thomas McDermott	417 66		
Chas. McMahon	414 45		
Thomas McSorley	875 25		
Thomas H. O'Hara	405 90		
Patrick Riley	455 40		
Joseph A. Stubbs	351 45		
Peter Tumilty	810 00		
Joseph F. White	875 70		
		14,009 02	
			$16,716 47
Balance unexpended,			2,219 52

Water Works, Construction.

Appropriation	$40,000 00
Additional appropriation	10,000 00
Surplus receipts	69 64
	$50,069 64

RECEIVED.

For pulleys, shaftings, etc. . . .	$57 64	
Rebate on bill	12 00	
	$69 64	

EXPENDED.

For labor, as per pay-rolls . . .	$12,717 45	
Carpenter work	90 45	
Repairing telephone line . . .	35 38	
		$12,843 28
Castings, pipes, gates, hydrant frames, valves and fittings.		
W. O. Barbour & Co.	71 07	
Barbour, Stockwell & Co. . .	40 61	
Davis & Farnum Mfg. Co. . .	236 64	
McNeal Pipe and Foundry Co.	6,203 84	
Chapman Valve Mfg. Co. . . .	2,312 64	
Walworth Mfg. Co.	288 75	
Coffin Valve Co.	106 00	
Sundry parties	15 30	
		9,274 85
Amounts carried forward		$22,118 13 $50,069 64

Amounts brought forward . . .		$22,118 13	$50,069 64
Lead and lead pipe:—			
Boston Lead Mfg. Co. . . .	1,050 89		
Chadwick Lead Works . . .	83 04		
		1,133 93	
Tools, hardware and supplies:—			
Ames Plow Co.	35 13		
Burditt & Williams	9 00		
James Maitland.	43 20		
Miller & Shaw	78 49		
S. C. Nightingale & Childs . .	50 34		
Sundry parties	14 07		
		230 23	
Metres and repairs:—			
American Frost Meter Co. . .	314 50		
Hersey Mfg. Co.	51 00		
Hersey Meter Co.	130 50		
H. R. Worthington	188 18		
Union Water Meter Co. . . .	283 50		
Water Waste Prevention Co. .	57 15		
		1,024 83	
Granite, Wight & Scorgie . . .		1,261 65	
Lumber, lime and cement.			
Wm. H. Wood & Co.	1 20		
George W. Gale	316 20		
George M. Winslow & Co. . .	162 80		
		480 20	
Pumps, repairs and use of:—			
Geo. F. Blake Mfg. Co. . . .	12,505 00		
A. C. Richmond	16 00		
A. K. Richmond & Son . . .	40 00		
		12,561 00	
Syphon and coffer-dam at Sixth street bridge:—			
John P. Perkins & Son . . .		705 00	
Teaming :—			
James Boyle	773 75		
William Condon	43 75		
Charles Conlan	545 25		
Patrick Curley	943 75		
P. H. Dardis	226 25		
John Doody	121 25		
William Hart	73 75		
David Landrigan	539 25		
E. A. O'Connor, Admx. . .	526 50		
Thomas O'Hara	750 00		
Peter Tumilty	932 50		
Amounts carried forward . . .	$5,476 00	$39,514 97	$50,069 64

Amounts brought forward . . .	$5,476 00	$39,514 97	$50,069 64
A. J. Woodsome	166 13		
John Brassil	540 00		
Peter Burns	538 75		
T. A. Callaghan	538 75		
		7,259 63	
Wharfage		18 80	
Expense of entertaining City Government at annual inspection of Water Works		193 75	
			46,987 15
Balance unexpended,			$3,082 49

Water Works, Construction, Fresh Pond (Purchase and Taking of Land on the Borders of Fresh Pond).

Appropriation			$25,000 00
Additional appropriations . . .			175,000 00
Receipts			12,120 25
			$212,120 25

RECEIVED.

For premium on bonds sold . . .	$12,120 25		

EXPENDED.

For land and damage:—				
Thomas F. Black.		8,500 00		
Cong. of Sisters of St. Joseph		40,750 00		
French Pond Ice Co.		102,952 50		
Rosella M. Gay		19,424 08		
Thomas Lyons		7,400 00		
Martin Moran		640 74		
John E. Somers		16,047 36		
			195,714 68	
Law expenses:—				
Professional services of C. T. and T. H. Russell . . .	1,200 00			
Chas. J. McIntire	750 00			
		1,950 00		
Reporting, J. M. W. Yerrington. . .		410 97		
Services of experts and travelling expenses		401 29		
Examination of title		5 00		
			2,767 26	
Amounts carried forward . . .			$198,481 94	$212,120 25

Amounts brought forward . . .			$198,481 94	$212,120 25
General expenses:—				
Advertising . . .		25 95		
Carriage hire . .		24 00		
Commission on sale of house . . .		40 00		
Printing bonds . .		135 00		
			224 95	
				$198,706 89
Balance unexpended,				$13,413 36

Water Works, Construction (Stony Brook Additional Water Supply).

Appropriation				$25,000 00
EXPENDED,				
For land and damage:—				
Boston Manufacturing Co. . .		$9,509 79		
Fitchburg Railroad Co. . . . -		464 42		
James Ellsworth		88 62		
			10,062 83	
Law expenses.				
Professional services:—				
Chas. J. McIntire	750 00			
Johnson & Harvey	60 00			
		810 00		
Reporting testimony:—				
Walter Rogers & Co.		303 80		
Services of expert		15 00		
			1,128 80	
General expenses.				
Labor:—				
Carpentry . . .	27 93			
Painting . . .	181 54			
Stone-cutting .	26 63			
Teaming . . .	14 00			
		250 10		
Supplies:—				
Fuel and cement	21 00			
Hardware and tools	60 21			
Lumber	132 80			
Sundries . . .	21 96			
		235 97		
Printing bonds . .		30 00		
			576 07	
				$11,707 70
Balance unexpended,				$13,292 30

Water Works, Interest.

Appropriation		$81,775 00
Receipts		627 77
		$82,402 77

RECEIVED.

For accrued interest on bonds sold	$627 77	

EXPENDED.

For interest on funded water loan:—		
Coupon bonds	$64,060 00	
Registered bonds	18,135 00	
		$82,195 00
Balance unexpended,		207 77

Water Works, Maintenance.

Appropriation		$40,000 00
Receipts		436 68
		$40,436 68
Transferred to Abatement of rates, fines, etc.		354 39
		$40,082 29

RECEIVED.

For grass	$160 00	
Old pump	100 00	
Sundries	176 68	
	$436 68	

EXPENDED.

For salaries:—		
Supt. Hiram Nevons	$2,300 00	
Asst. Supt., John L. Harrington .	1,283 60	
Engineer, E. C. Brooks	1,495 00	
Asst. Eng., E. I. Harris . . .	1,020 00	
Asst. Eng., William Blaisdell . .	28 57	
Inspector, Fred G. Davis . . .	780 00	
Asst. Inspector, E. B. Getchell .	61 25	
Foreman at Fresh Pond, Patrick Conlan	714 33	
Amounts carried forward . . .	$7,682 75	$40,082 29

Amounts brought forward . .	7,682 75		$40,082 29
Foreman of shop, B. P. Doe . .	780 00		
Engineer at reservoir			
Henry S. Adams	294 00		
Registrar and clerk, Walter H. Harding	2,080 00		
Office clerk, H. L. Lincoln . .	910 00		
Office clerk, H. F. Milligan . .	468 00		
Treasurer of Sinking Funds, Wm. W. Dallinger	200 00		
Laborers, as per pay-rolls . . .	13,082 90		
		25,497 65	
Teaming:—			
James Boyle	225 00		
Patrick Curley	102 50		
Peter Tumilty	487 75		
Sundry parties	629 75		
		1,445 00	
Alterations and repairs of buildings, reservoirs and streets, and materials for same:—			
Abel Stevens	196 45		
S. C. Higgins	186 12		
C. S. Packard	39 00		
L. D. Willcutt	290 57		
J. L. P. Ackers	167 50		
Geo. O. Danforth	136 00		
Levi Hawkes	67 60		
Geo. M. Winslow & Co. . .	135 00		
Gilkey & Stone	64 87		
Geo. W. Gale	279 55		
Sundry parties	446 63		
		2,009 29	
Fuel:—			
Stickney, Conyngham & Co.	3,827 51		
Sundry parties	707 19		
		4,534 70	
Hardware, tools, machinery and materials for repairs and furnishing:—			
Boston Woven Hose Co. . .	79 17		
W. O. Barbour & Co. . . .	102 31		
Geo. F. Blake M'f'g Co. . .	96 12		
Wm. Campbell & Co. . . .	76 10		
Vacuum Oil Co.	100 75		
A. N. Reynolds & Co. . . .	68 63		
Burditt & White	338 86		
Amounts carried forward . . .	$861 94	$33,486 64	$40,082 29

Amounts brought forward . .	$861 94	$33,486 64	$40,082 29
James Maitland	313 05		
Ames Plow Co.	73 75		
Sundry parties	364 31		
		1,613 05	
Horses, Wm. H. Woodbury . .	405 00		
Feed for:—			
J. Cushing & Co. 333 83			
Geo. G. Wright . 119 95			
M. O'Neil . . . 52 67			
	506 45		
Shoeing, clipping and veterinary services:—			
Thomas Smith . 102 87			
Sundry parties . 65 04			
	167 91		
Harnesses, carriages, wagons and repairs:—			
F. Ivers & Son . 412 20			
Stewart Bros. . 160 30			
Sundry parties . 53 97			
	626 47		
		1,705 83	
Meters and repairs:—			
Union Water Meter Co. . . .	94 57		
H. R. Worthington	30 94		
National Meter Co.	54 05		
A. J. Applegate	6 50		
		186 06	
Pipe and fittings:—			
Walworth Mfg. Co.	556 87		
Wm. Campbell & Co. . . .	200 00		
Sundry parties	61 98		
		818 85	
General expenses :—			
Boat	40 00		
Carriage hire	8 00		
Car tickets, Fitchburg R. Co. . . 66 50			
West End St. Railway Co. . . . 265 00			
	331 50		
Desks	69 50		
Directories	7 50		
Expressage	71 31		
Amounts carried forward . . .	$527 81	$37,810 43	$40,082 29

Amounts brought forward . . .		$527 81	$37,810 43	$40,082 29
Gas		27 05		
Ice		99 00		
Newspapers		10 50		
Rent of office and shop . . .		600 00		
Refreshments for laborers . .		67 73		
Small supplies		39 35		
Telephone, rent and tolls . .		188 10		
Tax on Belmont land		21 85		
Trees, James Grant		205 50		
Travelling expenses, Hiram Nevons		16 80		
Stationery, printing and postage:				
Winkley, Dresser & Co. . . .	121 04			
Walker, Young & Co.	135 75			
John Wilson & Son	75 00			
Sundry parties .	91 79			
		423 58		
			2,227 27	
				$40,037 70
Balance unexpended,				$44 59

Water Works, Rates, Fines, etc.

RECEIVED.

From sundry persons for water rates, fines, etc. $238,743 71

Water Works, Rates, Fines, etc., Abatements.

Appropriation			$4,000 00
Transferred from Maintenance . .		354 39	
Transferred from Supply Abatements		179 01	
			533 40
			$4,533 40

ALLOWED.

For abatements of water rates, fines, etc. . .	$4,533 40

Water Works, Rates, Fines, etc., Refunds.

Appropriation	2,500 00

EXPENDED.

For refund of water rates	2,201 30
Balance unexpended,	$298 70

Water Works, Sinking Funds.

Appropriation	$48,945 00
Surplus receipts of Water Works	15,945 39
	$64,890 39

EXPENDED.

For amount due the Trustees of the Sinking Funds of the Water Works	$64,890 39

Water Works, Supplies.

Appropriation	$6,300 00
Surplus receipts	113 37
	$6,413 37

RECEIVED.

For supply pipes, fittings and labor	$6,613 37	

EXPENDED.

For labor, as per pay rolls . . .		$2,298 00	
Pipe, fittings, etc.:—			
Chapman Valve M'f'g Co. .	1,160 06		
W. O. Barbour & Co	8 64		
Geo. Woodman & Co	74 71		
Walworth M'f'g Co.	2,055 93		
W. H. Ward & Co.	27 90		
		3,327 24	
			5,625 24
Balance unexpended,			$788 13

Water Works, Supplies, Abatements.

Appropriation	$200 00
Transferred to Abatements of Rates, Fines, etc.	179 01
	$20 99

EXPENDED.

For abatement of supply bills	$20 99

Recapitulation.

Title of Account.	Receipts.	Appropriation.	Expenses.	Bal. Unexpended.
Bridge (Harvard)	.....	$29,034 13	$13,722 78	$15,311 35
Bridges (West Boston, Craigie's and Prison Point	$605 40	7,613 61	7,499 38	114 23
Cambridge Cemetery	19,490 77	16,103 66	16,021 96	81 70
Cambridge Public Library	4,596 85	12,596 85	11,875 87	720 98
Discounts (Taxes)	.....	30,000 00	28,012 44	1,987 56
Engineering	97 50	9,100 00	9,045 90	54 10
Fire Department	264 47	56,864 47	56,501 50	362 97
Health Department	.....	3,500 00	3,128 62	371 38
Incidental Expenses	8,452 34	41,211 86	41,211 86	.....
Interest	4,183 36	119,275 15	119,275 15	.....
Lighting Streets	75 80	51,575 80	49,269 02	2,306 78
Pauper Department:—				
Almshouse	11,263 15	28,263 15	26,533 63	1,729 52
House Offal	7,386 33	18,886 33	18,044 75	841 58
Outside Aid	4,159 22	32,509 22	30,447 46	2,061 76
Salary of Assistant City Physician	.....	1,400 00	1,395 85	4 15
Police Department	5,285 72	96,285 72	94,872 37	1,413 35
Public Property:—				
City Buildings, Care and Repairs	1,862 02	11,745 27	11,142 62	602 65
Incidentals	2 00	1,630 52	1,630 52	.....
New City Hall (Furnishings)	.....	10,000 00	3,159 81	6,840 19
New Engine House and Land	.....	17,400 00	6,270 95	11,129 05
School Houses:—				
Care and Repairs	87 90	36,571 38	36, 491 85	79 53
New High School House	.....	195,345 65	94,345 35	101,000 30
New School House in Ward Four	.....	74,900 00	25,355 37	49,544 63
New Putnam School House	.....	32,626 21	32,626 21	.....
Salaries	1,500 00	27,137 51	27,137 51	.....
School Department:—				
Incidental Expenses	.....	700 00	612 05	87 95
Salaries	1,360 69	193,877 21	193,877 21	.....
Text-Books and Supplies	244 53	15,812 49	15,668 73	143 76
Sewer Department:—				
Construction (Belmont Sewer System)	.....	5,830 69	5,830 69	.....
Construction (Sundry Sewers)	12,876 69	25,000 00	16,912 93	8,087 07
Maintenance	1,857 05	34,169 31	28,039 71	6,129 60
Sinking Funds	.....	66,380 00	66,380 00	.....
State Aid	10,863 25	19,783 84	19,519 32	264 52
Stationery and Printing	.....	5,079 41	5,079 41	.....
Street Department:—				
Bridges (Rebuilding, Widening and Maintenance	.....	32,000 00	10,798 43	21,201 57
Extensions and Widenings:—				
Brattle Street	.....	2,774 61	2,774 61	.....
Charles River Street	.....	1,000 00	958 00	42 00
Front Street	.....	16,298 52	13,986 09	2,312 43
Maintenance, including the Collection of Ashes	2,751 57	110,751 57	110,650 77	100 80
Paving:—				
Bridge Street	.....	18,000 00	17,997 68	2 32
Edgestones and Sidewalks	10,857 16	22,516 16	21,637 97	878 19
North River Flagging Stone	.....	1,000 00	1,000 00	.....
Shade Trees and Public Grounds	113 10	5,113 10	5,003 35	109 75
Watering (Sundry Streets)	12,935 99	18,935 99	16,716 47	2,219 52
Water Works:—				
Construction	69 64	50,069 64	46,987 15	3,082 49
Construction (Fresh Pond Land Acct)	12,120 25	212,120 25	198,706 89	13,413 36
Construction (Stony Brook Water Supply)	.....	25,000 00	11,707 70	13,292 30
Interest	627 77	82,402 77	82,195 00	207 77
Maintenance	436 68	40,082 29	40,037 70	44 59
Rates, Fines, etc	238,743 71	.....	.....	.....
Rates, Fines, etc. (Abatements)	.....	4,533 40	4,533 40	.....
Rates, Fines, etc. (Refunds)	.....	2,500 00	2,201 30	298 70
Sinking Funds	.....	64,890 39	64,890 39	.....
Supplies	6,613 37	6,413 37	5,625 24	788 13
Supplies (Abatements)	.....	20 99	20 99	.....
Totals	$381,784 28	$2,044,632 49	$1,775,367 91	$269,264 58

Cambridge Water Works, in account with the City of Cambridge for the year ending November 30th, 1890:—

Receipts and Expenditures.

Balance in the City Treasury to the credit of Water Works account, November 30, 1889:—			
Fresh Pond Land . . .	$727 97		
Stony Brook	11,346 50		
Total	12,074 47		
RECEIVED.		EXPENDED.	
From sale of Fresh Pond Land Bonds .	$200,000 00	For Fresh Pond Land .	$198,706 89
Premiums and accrued interest	$12,748 02	Stony Brook	11,707 70
Revenue on construction account . . .	69 64	General construction .	46,987 15
Revenue on maintenance account . .	436 68	Maintenance	40,037 70
Revenue from rates, fines, etc.	238,743 00	Supplies	5,625 24
Revenue from supplies	6,613 37	Abatement of rates, fines, etc.	4,533 40
		Abatement of supply bill	20 99
		Refund of rates, fines,	2,201 30
		Interest on Water Debt	82,195 00
		Amount due the Sinking Funds	64,890 39
		Total	$456,905 76
		*Balance carried over	13,780 13
	$470,685 89		$470,685 89

*Balance brought forward to the credit of the Cambridge Water Works, November 30, 1890, is as follows:—

Water Works Construction, Fresh Pond Land	$14,141 33
Less amount due the City of Cambridge on Water Works Construction, Stony Brook	361 20
Balance due Cambridge Water Works	$13,780 13

Schedule of Real Estate Owned by the City of Cambridge.

Cambridge Cemetery 60 1/10 A .	$100,000		
2 Houses	12,500		$112,500
Cambridge Public Library . .	75,000		
135,621 ft. land	29,900		104,900
Fire Department:—			
Hook and Ladder No. 2, Portland street	12,000		
11,931 ft. land	3,000	$15,000	
Engine House No. 5, Junction Cambridge and Hampshire streets	10,000		
6000 ft. land	3,000	13,000	
Engine House, Fourth street .	9,000		
4220 ft. land	2,100	11,100	
Engine House No. 4 and Stable, North avenue . . .	7,000		
6516 ft. land	3,000	10,000	
Engine House No. 2, Main street	5,000		
3150 ft. land	3,000	8,000	
Engine House No. 6, River street, unfinished . . .	3,000		
4994 ft. land	3,500	6,500	
			$63,600
Pauper Department:—			
Almshouse, etc., Tannery street	25,000		
14 242/1000 acres land	11,000		36,000
Public Buildings and lands:—			
City Hall (new), Main street .	200,000		
48,474 ft. land	48,500	248,500	
City Hall (old), Main street .	10,000		
12,881 ft. land	19,300	29,300	
Ward One Building, Mt. Auburn street	60,000		
16,153 ft. land	9,700	69,700	
Ward Four Building, Green street	50,000		
13,028 ft. land	10,500	60,500	
Stables, Sheds and Scales, Hampshire street . . .	17,000		
72,661 ft. land	30,000	47,000	
1 House N. S. Spruce street .		4,000	
Park, Boylston and Mt. Auburn streets, 10,226 ft. land		6,000	
Amounts carried forward . .		$465,000	$317,000

Amounts brought forward .		$465,000	$317,000
Park, S. S. Broadway, 107,181 ft. land		54,000	
Park, Hastings square, 30,000 ft. land		9,000	
Park, Dana square, 33,531 ft. land		12,000	
Park, Pleasant street, 1,372 ft. land		1,000	
Park, Pleasant, River, Cottage and Kinnaird streets, 1,569 feet land		1,200	
Fort Washington, E. S. Waverly street, 42,123 ft. land		8,000	
Mill Pond, N. S. River street, 305,690 feet		46,000	
Lot, N. S. Cambridge street, 5,000 feet		2,000	
Lot, S. S. Porter street, 3,578 feet		700	
Lot, E. S. Portland street, 18,011 feet		5,500	
8 Lots, E. S. Norfolk street, 39,600 feet		12,000	
Lot, S. S. Broadway, 17,515 feet		7,000	
Lot, Second street, 26,400 feet		1,300	
Lot, W. S. Reed street, 1,500 feet		100	
2 Lots, Walden street, 16,365 feet		3,000	
Lot, N. S. River street, 2,282 feet		700	
Land, W. S. Brookline street, 25,650 feet		7,000	
Wharf, S. S. Main street, 9,720 street		7,300	
Flats, S. S. Main street, 152,659 feet		7,600	$650,400
School Department :—			
WARD ONE.			
New High School (unfinished) Broadway	$100,000		
74,366 feet land	20,000	$120,000	
Washington Grammar, Brattle street	30,000		
14,951 feet land	7,000	37,000	
Amounts carried forward . .		$157,000	$967,400

Amounts brought forward . .		$157,000	$967,400
Corlett Grammar, Holworthy	3,000		
10,000 feet land	600	3,600	
Agassiz Primary, Sacramento street	18,000		
19,689 feet land	6,000	24,000	
Cushing Primary, Cushing street	3,000		
14,788 feet land	1,000	4,000	
Dunster Primary, Concord avenue	4,000		
10,000 feet land	2,000	6,000	
Holmes Primary, Hilliard street	6,000		
11,182 ft. land	4,500	10,500	
Lowell Primary, Lowell street	7,000		
12,033 feet land	2,000	9,000	
Quincy Primary, Mason street	10,000		
8,469 feet land	4,200	14,200	
Riverside Primary, Putnam avenue	5,000		
11,198 feet land	2,800	7,800	
WARD TWO.			
English High, Fayette street,	$40,000		
37,828 feet land	15,000	$55,000	
Latin High, Lee street . . .	10,000		
10,100 feet land	5,000	15,000	
Wellington Training, Columbia street	16,000		
18,870 feet land	5,700	21,700	
Allston Grammar, Boardman st.	18,000		
15,193 feet land	4,600	22,600	
Harvard Grammar, Inman street	40,000		
20,494 feet land	12,000	52,000	
Bridge Primary, Pioneer street	500		
4,646 feet land	1,400	1,900	
Dana Primary, Centre street .	2,000		
14,317 feet land	4,300	6,300	
Felton Primary, Amory street	6,000		
15,090 feet land	4,500	10,500	
Gannett (old) Primary, Columbia	2,000		
8,803 feet land	2,500	4,500	
Amounts carried forward . .		$425,600	$967,400

Amounts brought forward .		$425,600	$967,400
Gannett (new) Primary, Jefferson street	12,000		
14,934 feet land	3,000	15,000	
Sargent Primary, Broadway .	3,000		
9,995 feet land	4,000	7,000	
Stearns Primary, Harvard street	3,000		
10,050 feet land	5,000	8,000	
WARD THREE.			
Putnam Grammar, Fourth and Otis Sts.	60,000		
11,900 feet land.	8,300	68,300	
Thorndike Grammar, Thorndike St.	30,000		
10,027 feet land.	4,000	34,000	
Gore Primary, Gore street .	25,000		
9,900 feet land	4,000	29,000	
Lassell Primary, Charles street	8,000		
10,000 feet land	2,500	10,500	
Otis Primary, Otis street . .	12,000		
8,270 feet land	4,000	16,000	
WARD FOUR.			
Webster Grammar, Upton street	$50,000		
25,839 feet land.	9,000	$59,000	
Boardman Primary, Windsor street	12,500		
10,018 feet land.	4,000	16,500	
Mason Primary, Front street	2,000		
10,000 feet land.	8,000	10,000	
Tarbell Primary, Grigg street	8,000		
19,500 feet land.	4,000	12,000	
Willard, Primary, Lake street	20,000		
20,079 feet land	5,000	25,000	
New Ward Four school-house on Allston and Brookline streets, unfinished . . .	25,000		
25,650 feet land.	7,000	32,000	
WARD FIVE.			
Peabody Grammar, Linnæan street	$25,000		
21,813 feet land	5,400	$30,400	
Amounts carried forward . .		$798,300	$967,400

Amounts brought forward . .		$798,300	$967,400
Shepard Grammar, North ave.	20,000		
14,755 feet land . . .	7,000	27,000	
Reed Primary, Reed street .	3,500		
12,000 feet land	1,000	4,500	
Wyman Primary, Spruce street	6,000		
14,347 feet land	2,400	8,400	
			838.200
Sewer Department:—			
Stables and sheds	$2,000		
23,707 feet land	5,900		7,900
			$1,813,500
Water Works:—			
House and barn, S. S. Concord avenue	1,300		
House, S. S. Concord avenue .	2,000		
$27\frac{33}{100}$ acres land	16,700	20,000	
Land, S. S. Concord avenue, $\frac{5}{8}$ acre		300	
House and shed, E. S. Woodlawn avenue	400		
15,735 feet land.			
Lot, rear of Grove street in Belmont, 272,800 feet.			
Lot, S. S. Concord avenue, 99,000 feet.			
2 ice-houses, S. S. Concord avenue	4,800		
11,220 feet land.			
2 Lots, S. S. Concord avenue, 219,400 feet.			
Lot, S. S. Concord avenue, 24,100 feet.			
Hotel, house, stables, etc., Fresh Pond Lane . . .	12,000		
$11\frac{1}{4}$ acres land.			
Kingsley Park, Fresh Pond Lane, 309,336 feet.			
Lot, rear Fresh Pond Lane, 364,608 feet.			
Lot, Holworthy street, 18,480 feet.			
Lot, Woodlawn avenue, 107,616 feet.			
Lot, Woodlawn avenue, 26,989 feet.			

Lot, Woodlawn avenue, 91,040 feet.		
Lot, W. S. Cushing street, 22,348 feet.		
Lot, E. S. Cushing street, 41,053 feet.		
Lot, Woodlawn avenue, 9,405 feet.		
Lot, Woodlawn avenue, 24,096 feet.		
Lot, E. S. Cushing street, 222,750 feet		
House, E. S. Cushing street .	1,000	
416,800 feet land		
2 Lots, near Fresh Pond and Adams place, 110,891 feet		
House, Adams street . . .	400	
House, Adams street . . .	200	
55,275 feet land		
Land, Adams street, 105,322 feet		
2 Houses, dwelling-houses, Woodlawn avenue	1,500	
2 Stacks, Woodlawn avenue .	500	
25,216 feet land	2,500	4,500
Gravel Pit, S. S. Concord avenue, 397,417 $\frac{7}{10}$ feet		
House, stable and shed, Adams street	1,400	
190,500 feet	4,300	5,700
Lot, W. S. Cushing street, 91,112 feet		200
6 Icehouses, near Concord avenue and railroad . . .	20,000	
Engine House, near Concord avenue and railroad . .	1,200	
House, shed and stable, near Concord avenue and railroad	1,100	
6 Icehouses, near Concord avenue and railroad . . .	18,000	
3 Icehouses, near Concord avenue and railroad . . .	3,700	
4½ acres land	6,000	50,000
House, near Fresh Pond . .	2,000	
House, old, Adams place . .	800	
Barn and shed, Adams place .	1,200	

Tool House, Adams place . .	600	
2 Icehouses, Adams place . .	7,000	
3 Icehouses, Adams place . .	15,000	
Engine House and sheds, Adams place	1,100	
Office and scales, Adams place	300	
Icehouses (Black's), Adams pl.	3,000	
419,222 feet land	21,000	52,000
House, S. S. Concord avenue near Adams street . . .	500	
10,805 feet land	500	1,000
House, Concord avenue, corner Adams street . . .	700	
32,425 feet land	700	1,400
House and stable, Concord ave.	2,000	
62,000 feet land	1,200	3,200
Lot, Adams street, $1\frac{3}{4}$ acres .		1,000
House and stable, S. S. Concord avenue	4,000	
294,000 feet land	3,000	7,000
Tudor Park, near Concord avenue, 57,312 feet land.		
Pumping Station, Worthington street, 90,414 feet land		
Reservoir, Reservoir street, 86,920 feet land		
Lot (Coolidge).		
1 House, stable and sheds, S. S. Auburn street	3,700	
33,300 feet land	6,600	10,300

The following is a schedule of property used for religious, charitable and educational purposes and exempt from taxation by law, not including that owned by the City of Cambridge :—

Exempted Property.

WARD ONE.

Christ Church, Episcopal, Garden street:—		
Church	$12,000 00	
19,215 feet land . . .	10,000 00	22,000 00
First Parish Church, Unitarian:—		
Church, North avenue .	20,000 00	
14,764 feet land . . .	22,000 00	42,000 00
Amount carried forward .		$64,000 00

Amount brought forward			$64,000 00
North Ave. M. E. Church:—			
Church, North avenue .		2,000 00	
11,248 feet land . . .		9,000 00	11,000 00
Old Cambridge Baptist Society:—			
Church, Main and Harvard streets		86,000 00	
34,573 feet land . . .		24,000 00	110,000 00
Shepard Congregational Society:—			
Church, Garden street . .		100,000 00	
34,556 feet land . . .		21,000 00	121,000 00
St. Peter's Catholic, Concord avenue		43,000 00	
32,000 feet land . . .		10,000 00	53,000 00
St. Paul's Catholic, Mt. Auburn street . . .		16,000 00	
11,216 feet land . . .		8,000 00	24,000 00
St. Paul's Catholic School Association:—			
Personal property . . .		1,000 00	
House, Arrow and Mt. Auburn streets . . .		6,500 00	
29,091 feet land . . .		14,500 00	22,000 00
Cambridge Hospital:—			
Personal property . . .		90,863 43	
Building, Mt. Auburn street		55,000 00	
412,487 feet land . .		41,000 00	186,863 43
Longfellow Memorial Association:—			
Personal property . . .		17,308 87	
Land, S. S. Mt. Auburn street, 74,144 feet . .		20,000 00	37,308 87
Episcopal Theological School, Trustees of:—			
Personal property . . .		110,638 69	
Chapel, Seminary, dormitories, and two houses, Brattle and Mason sts. .	210,400 00		
101,874 ft. land .	51,000 00	261,400 00	
Amounts carried forward		$372,038 69	$629,172 30

Amounts brought forward	$372,038 69	$629,172 30	
Two houses, Hawthorne and Acacia streets . . 10,300 00			
7,500 feet land . 3,700 00	14,000 00		
		386,038 69	
Society for the Collegiate instruction of Women:—			
Personal property . . .	85,000 00		
House, Garden and Mason streets	9,000 00		
23,500 feet land . . .	12,000 00		
Laboratory and gymnasium, 20 Mason street	3,000 00		
20,058 feet land . . .	8,000 00	117,000 00	
The Corporation of the New Church Theological School:—			
Personal property . . .	61,577 00		
House and stable, 48 Quincy street . . .	10,000 00		
60,000 feet land . . .	30,000 00	101,577 00	
President and Fellows of Harvard College:—			
Personal property . . .	5,833,268 00		
Dormitories, Chapel, Laboratories, Museums, Lecture Rooms and Houses, including Ward 5 property	2,683,000 00	$8,516,268 00	
			$9,750,055 99
	WARD TWO.		
Baptist Church, Trustees of Funds of: —			
Chapel, Hampshire street	$3,000 00		
2,560 feet land . .	800 00	$3,800 00	
Broadway Baptist Church:			
Church, W. S. Boardman street	30,000 00		
11,620 feet land . . .	8,000 00	38,000 00	
Cambridgeport Unitarian Society:—			
Church, N. S. Austin street	18,000 00		
13,116 feet land . . .	8,000 00	26,000 00	
Amounts carried forward		$67,800 00	$9,750,055 99

Amounts brought forward . . .		$67,800 00	$9,750,055 99
Harvard street M. E. Society:—			
Church, N. S. Harvard street	22,000 00		
10,030 feet land . . .	8,000 00	30,000 00	
St. Paul's A. M. E. Church:—			
Church, N. S. Hastings street	2,000 00		
5,386 feet land . . .	2,000 00	4,000 00	
Stearns Chapel, Congregationalist:—			
Church, N. S. Harvard street	8,000 00		
6,000 feet land . . .	3,000 00	11,000 00	
First Evangelical Congregational Society:—			
Church, W. S. Prospect street	40,000 00		
19,513 feet land . . .	12,000 00	52,000 00	
First A. M. E. Society:—			
House, 54 Hastings street	600 00		
1,616 feet land . . .	500 00	1,100 00	
First Universalist Society of Cambridge:—			
Church, E. S. Inman street	20,000 00		
15,312 feet land . . .	11,300 00	31,300 00	
St. Mary's Parochial School:—			
Church, W. S. Norfolk, corner Harvard street	45,000 00		
Girls' School, S. S. Harvard street	8,000 00		
Boys' School, E. S. Essex street	18,000 00		
Sisters' Home, 50 and 52 Essex street . . .	7,000 00		
57,428 feet land . . .	20,000 00		
Theatre, E. S. Norfolk street	15,000 00		
13,032 feet land . . .	6,500 00		
Gymnasium, E. S. Prospect street	35,000 00		
11,370 feet land . . .	5,600 00		
House, 55 Norfolk street .	7,500 00		
7,500 feet land . . .	2,300 00	169,900 00	
			367,100 00
Amount carried forward .			$10,117,155 99

Amount brought forward			$10,117,155 99
WARD THREE.			
First Methodist Episcopal Church:—			
Church, Cambridge, corner Third street . .	$25,000 00		
5,000 feet land . . .	12,500 00	$37,500 00	
Second Baptist Society:—			
Church, Cambridge and Fourth streets	12,000 00		
6,000 feet land . . .	10,000 00	22,000 00	
Missions of the Ascension:—			
Church, Third, and Thorndike streets	5,000 00		
5,000 feet land . . .	4,000 00	9,000 00	
Second Universalist Society:—			
Church, Otis street . .	16,000 00		
5,000 feet land . . .	3,000 00	19,000 00	
St. John's Church:—			
Church, Fourth street . .	25,000 00		
5,000 feet land . . .	3,000 00	28,000 00	
Church of Sacred Heart:—			
Church, Sixth, Otis and Seventh streets . .	70,000 00		
30,000 feet land . . .	12,000 00	82,000 00	
Middlesex County Buildings:—			
Court House, Third, Otis and Thorndike streets	70,000 00		
Registry of Deeds, Second, Otis and Third streets	175,000 00		
60,000 feet land . . .	36,000 00	281,000 00	
House of Correction, Jail and shops, Thorndike, Third, Spring and Second streets	250,000 00		
60,000 feet land . . .	24,000 00	274,000 00	
St. John Literary Institute:—			
Hall and stores, Cambridge street, $\frac{2}{3}$ value . . .	20,000 00		
$\frac{1}{2}$ of 6,300 feet land . .	4,700 00	24,700 00	777,200 00
			$10,894,355 99
WARD FOUR.			
Cambridge Young Men's Christian Association:—			
Personal property . . .	$1,553 95		
Amounts carried forward	$1,553 95		$10,894,355 99

Amounts brought forward	$1,553 95		$10,894,355 99
Building, 622–624 Main street	8,000 00		
Land	8,000 00	$17,553 95	
Charles River Baptist Church:—			
Church, E. S. Magazine street	3,000 00		
11,250 feet land . . .	3,000 00	6,000 00	
First Baptist Society :—			
Church, Central Square .	80,000 00		
21,200 feet land . .	20,000 00	100,000 00	
Grace M. E. Church :—			
Church, E. S. Magazine street	35,000 00		
7,700 feet land . . .	5,000 00	40,000 00	
Mass. Baptist Convention—			
Union Baptist Church:—			
Church, 452 Main street .	10,000 00		
3,900 feet land . . .	2,800 00	12,800 00	
Pilgrim Congregational Church:—			
Church, W. S. Magazine street	30,000 00		
8,885 feet land . . .	7,500 00	37,500 00	
Protestant Episcopal Church, Trustees of donations to:—			
Church, S. S. Main street (St. Peter's) . . .	10,000 00		
9,229 feet land . . .	9,000 00	19,000 00	
Rush African M. E. Zion Church:—			
Church, S. S. School street	6,000 00		
Lot No. 7, 2,760 feet .	1,100 00	7,100 00	
St. Philip's Church, Episcopal:—			
Church, N.S. Allston street	3,000 00		
4,686 feet land . . .	1,200 00	4,200 00	
Wood Memorial Church, Congregationalist:—			
Church, W. S. Columbia, corner Austin street .	30,000 00		
7,500 feet land . . .	4,000 00	34,000 00	
			$278,153 95
Amount carried forward .			$11,172,509 94

Amount brought forward			$11,172,509 94
WARD FIVE.			
Catholic Cemetery, Spruce street, 30,404 feet.	10,000 00		
North avenue Congregational Society:—			
Church, North avenue .	$30,000 00		
13,430 feet land . . .	5,000 00	35,000 00	
Third Universalist Society:—			
Church, North avenue .	30,000 00		
11,958 feet land . . .	6,000 00	36,000 00	
St. James Episcopal Society:—			
Church and Chapel, North avenue and Beech street	75,000 00		
21,207 feet land (cemetery lot included) . .	10,000 00	85,000 00	
North avenue Baptist Society:—			
Church, North avenue .	55,000 00		
38,873 feet land . . .	15,000 00	70,000 00	
Avon street Home, Trustees of:—			
Personal property . . .	12,615 07		
Buildings, Avon Hill street	4,500 00		
16,810 feet land . .	3,500 00	20,615 07	$256,615 07
Total			$11,429,125 01

REPORT

OF THE

COMMITTEE ON ACCOUNTS.

CITY OF CAMBRIDGE, December 30, 1890.

To the Honorable the City Council of the City of Cambridge:

THE Committee on Accounts for the year 1890 respectfully submits its annual report as required by the City Ordinance.

The Committee has from time to time made the prescribed examination of the books of the Auditor of Accounts and duly approved the same.

The Committee also begs to report that it has approved the suggestion of the Auditor of Accounts, referred to this Committee by the Committee on Finance, that hereafter separate appropriations be made to cover the expenditures for each department, so that the total cost of every department for the financial year shall be clearly shown; and it has accordingly passed a vote directing the Auditor of Accounts to keep his accounts for the financial year beginning December 1, 1890, in accordance therewith.

The Committee recommends that the next City Council make its appropriations in accordance with this vote.

CHARLES L. FULLER,
WILLIAM T. PIPER,
EDWARD C. WHEELER,
HERMAN BACHMAN,
SILAS E. BUCK.

REPORT

OF THE

COMMITTEE ON FINANCE.

THE annual report of the Committee on Finance, for the year 1890 is herewith submitted.

Under the provisions of an ordinance originally dating from the early years of the city, the financial year is made to begin on the first day of December, while it is further required that the annual estimates of the Committee on Finance shall be reported to the City Council in the month of February. For the intervening time between the beginning of the financial year as before stated, and the date of the adoption of the regular appropriations in any given year, it is necessary that temporary provision should be made for the expenditure of money by the various departments. The usual order for this purpose, was passed in December, 1889, and in the month of February, 1890, this committee reported its estimates with the usual orders making the annual appropriations. The estimates were as follows: —

Estimates of Appropriations and Revenue, 1890.

RECAPITULATION.

	Appropriation.	Revenue.	Net Expense.
Total estimates, City Department accounts	$1,506,466 66	$121,750 00	$1,384,716 66
Total estimates, Water Department accounts	273,720 00	239,720 00	34,000 00
Grand totals	$1,780,186 66	$361,470 00	$1,418,716 66
Amount of estimated expenses, as before recited,		$1,780,186 66	
Allowance for estimated uncollected taxes *of the year* 1890, remaining uncollected as of Nov. 29, 1890		90,000 00	
Total appropriations and liabilities			$1,870,186 66
LESS			
Estimated revenue of all kinds, and cash in the treasury, as hereinbefore recited			610,134 31
Leaving an amount to be provided for of			$1,260,052 35

The Committee recommends that this amount be provided for as follows: —

1.	By the issue of City Loan Bonds, viz.: —		
	High School Loan, to be issued in 1890	$100,000 00	
	High School Loan, to be issued in 1891	100,000 00	
	New School House in Ward Four	35,000 00	
	Sewer Loan (for sundry sewers),	15,000 00	
	Bridge Loan (for widening and rebuilding certain bridges)	20,000 00	
			$270,000 00
2.	By the issue of Water Loan Bonds, viz.: —		
	Water Works (construction)		34,000 00
3.	By assessment upon the polls and estates of the inhabitants of Cambridge, etc., for the current year, being the amount required for municipal expenses for the year (the State Tax and County Tax to be assessed by the Assessors, by authority of law, in addition hereto)		956,052 35
	Total		$1,260,052 35

These estimates were adopted by the City Council, as reported by the Committee, the net sum which the assessors were required to raise by assessment upon the polls and estates of the inhabitants of Cambridge, being the amount stated in paragraph No. 3 of the foregoing recommendation, viz.: —

	$956,052 35
The assessors added the sum of	141,582 41
Making the total amount of the warrant	$1,097,634 76

These additions are given in detail in the report of the Auditor of Accounts.

Besides these regular appropriations as before stated, various special appropriations were made from time to time during the year, on recommendation of this Committee, as follows: —

CITY ACCOUNTS.

To be met from unappropriated revenue.

For furnishing the New City Hall	$10,000 00
State Aid (soldiers and their families)	3,000 00
School Department (salaries)	2,877 21
	$15,877 21
Amount carried forward	$15,877 21

Amount brought forward		$15,877 21

To be provided for by City Debt.

For Front street widening and extension	$5,000 00	
New School House in Ward Four	19,900 00	
		$24,900 00
Total City Accounts		$39,777 21

Water Department Accounts, to be Provided for by City Water Loan.

Water Works, Construction, Fresh Pond Land Loan	$ 75,000 00
" " " " " " "	125,000 00
" " " General Construction	10,000 00
Total Water Works account	$210,000 00

Of the list of regular and special appropriations before mentioned, to be provided for by City Debt, the following were temporarily provided for, the bonds therefor to be issued at a future time:—

High School Loan, to be issued in 1891		$100,000 00
New School House in Ward Four	35,000 00	
" " " " " additional	19,900 00	
		54,900 00
Bridge Loan		20,000 00
Water Works (Construction)		44,000 00
Total		$218,900 00

The High School Loan was not to be expended in the year 1890, but will be called for in the coming year, at the completion and acceptance of the new building. The contemplated loan for the new school house in Ward Four, it is thought, may not be needed, as the amount of the same may be included in the tax levy for the next year. The subject of the proposed Bridge Loan of $20,000.00 will also go over by the City Council of 1891. The proposed Water Works Construction Loan, amounting in all to $44,000.00, was not called for, and the same was met from the revenue of the Water Department.

Bonds of the City of Cambridge were issued and disposed of by this Committee, under authority of orders of the City Council, as follows:—

$100,000 00. High School Loan, bonds dated May 1, 1890, payable in ten years at 4 per cent. Sold to N. W. Harris & Co. at $1,045.10 for each $1000.00 bond.

5,000 00. Sewer Loan, dated May 1, 1890, payable in twenty years at 4 per cent., issued by the Trustees of the Cambridge Public Library, *at par*, funding the Citizens' subscription to the Library.

5,000 00. Sewer Loan, same loan as above, issued to the Trustees of the Daniel White charity at par, funding a bequest of the late Hon. J. Warren Merrill.

5,000 00. Sewer Loan, same loan as above, registered in name of the Committee on Finance as Trustees of the Cemetery Fund, to invest the amount received for the perpetual care of lots, *at par.*

5,000 00. Harvard Bridge Loan, bond sold to the Trustees of the Sinking Fund of the Water Works *at par*, dated November 1, 1890, payable in *thirty years at 4 per cent.*

75,000 00. Water Loan (Fresh Pond Land), bonds sold to Adams, Blodgett & Co. at $1.07\frac{27}{100}$, dated July 1, 1890, payable in twenty years at 4 per cent.

125,000 00. Water Rond (Fresh Pond Land), bonds sold to Adams, Blodgett & Co. at $1.05\frac{33}{100}$, dated September 1, 1890, payable in twenty years at 4 per cent.

TOTAL AMOUNT OF BONDS ISSUED.

City Bonds	$120,000 00
Water Bonds	200,000 00

Alderman Frank H. Teele and Councilmen Edward C. Wheeler and Herbert A. Chase were appointed a sub-committee to count the cash in the City Treasury at close of business, Saturday, November 29. Their report is as follows:—

CITY OF CAMBRIDGE, December 26, 1890.

To the Committee on Finance:

The sub-committee appointed to count and examine the cash in the hands of the Treasurer at the close of business on November 30, 1890, would respectfully report:—

Nov. 30, 1890. Actual cash in Treasurer's office. .		$1,729 90
A certificate from W. A. Bullard, Cashier of First National Bank, showing a balance to the credit of the Treasurer of	$153,268 38	
From this balance should be deducted checks given by the Treasurer prior to November 30, but not received by the Bank, amounting to	50,137 44	
Leaving a balance in Bank, as shown by the Treasurer's books of		103,130 94
Making the total cash on hand		104,860 84
Amount carried forward		$104,860 84

Amount brought forward		$104,860 84
Dec. 26, 1890. After certain additional entries were made belonging to the financial year of 1890, your committee found receipts and expenditures as follows:—		
RECEIPTS.		
From the Commonwealth—Corporation Tax . . .	49,454 04	
" " " " —National Bank	17,563 57	
" " " " —State Aid	10,633 50	
Total		77,651 11
Which amount added to the Treasurer's balance of November 13, 1890, makes a total of		182,511 95
EXPENDITURES.		
Authorized additional payments as of November 30, and verified by the Auditor's books as follows:—		
Pay-rolls for the last week of November	7,018 39	
State Tax for 1890	54,180 00	
National Bank Tax-refunding of taxes on non-resident owners	6,296 28	
Surplus in running account of the Water Works paid to the Trustees of the Water Loan Sinking Fund .	15,945 39	
Registrars of Voters, Salaries for 1890	2,100 00	
		85,540 06
Showing a balance of cash in the Treasurer's hands as of November 30, 1890, of		96,971 89

Your Committee would further state that so far as it was possible, their figures have been verified by an examination of the Auditor's books.

Respectfully submitted,

FRANK H. TEELE,
EDWARD C. WHEELER,
HERBERT A. CHASE,
} *Sub-Committee.*

Accompanying the foregoing report was the following certificate of deposit:—

FIRST NATIONAL BANK.

CAMBRIDGEPORT, Mass., Nov. 30, 1889.

To the Treasurer of the City of Cambridge:

DEAR SIR:—

The balance standing to your credit on the books of this Bank at the close of business today is One Hundred Fifty-three Thousand Two Hundred and Sixty-eight and Thirty-eight Hundredths Dollars ($153,268.38).

Respectfully yours,

W. A. BULLARD,
Cashier.

Following are the usual comparative tables representing the figures included in the assessors' warrant to the City Treasurer as of May 1, 1890, the items being a transcript from the books of the assessors. Upon the average of the assessors' valuations of the taxable property for the three years herein given, the assessment of taxes for the year 1891 must be based, under the provisions of Section 1 of Chapter 312 of the acts of the year 1885.

Polls and Valuation of Polls and Estates, May 1, 1888.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total, Real and Personal	Dwellings.	Total Tax.
1.....	2,859¾	$5,719 50	$6,417,715	$12,581,600	$18,999,315	1,981	$290,709 22½
2.....	5,035¾	10,071 50	3,485,715	11,912,700	15,398,415	2,629	241,047 72½
3.....	3,295¾	6,591 50	1,456,110	7,506,500	8,962,610	1,461	141,030 65
4.....	4,489	8,978 00	1,782,900	9,779,800	11,562,700	2,621	182,418 50
5.....	1,878½	3,757 00	1,099,200	6,427,800	7,527,000	1,235	116,662 00
Total...	17,558½	$35,117 50	$14,241,640	$48,208,400	$62,450,040	9,927	$971,868 10

Polls and Valuation of Polls and Estates, May 1, 1889.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total, Real and Personal	Dwellings,	Total Tax.
1.....	2,919	$5,838 00	$6,156,180	$12,983,800	$19,139,980	1,969	$312,077 68
2.....	5,199½	10,399 00	3,795,790	12,443,300	6,239,090	2,734	270,224 44
3.....	3,392	6,784 00	1,482,730	7,724,500	9,207,230	1,513	154,099 68
4.....	4,785½	9,571 00	2,070,200	10,398,100	12,468,300	2,705	209,063 80
5.....	1,962	3,924 00	1,344,800	6,733,400	8,078,200	1,301	133,175 20
Total...	18,258	$36,516 00	$14,849,700	$50,283,100	$65,132,800	10,222	$1,078,640 80

Polls and Valuation of Polls and Estates, May 1, 1890.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total, Real and Personal	Dwellings.	Total Tax.
1.....	2,994	$5,988 00	$6,208,885	$13,459,300	$19,668,185	2,057	$312,030 36
2.....	5,480½	10,961 00	3,936,580	12,812,900	16,749,480	2,823	267,119 24
3.....	3,450¼	6,900 50	1,602,660	7,958,800	9,561,460	1,543	153,588 86
4.....	5,041¾	10,083 50	2,340,200	10,917,000	13,257,200	2,799	216,895 82
5.....	2,143½	4,287 00	1,206,300	7,029,300	8,235,600	1,393	132,762 36
Total...	19,110	$38,220 00	$15,294,625	$52,177,300	$67,471,925	10,615	$1,082,396 64

N. B.—The amount of the non-resident Bank Tax and the tax upon supplementary warrants, are not included in the amounts stated as the total tax for the several years above mentioned. The valuation of the property assessed in the supplementary warrants for these years is not added to the total valuations as above given.

The valuations of estates in this city, for the years hereinbefore mentioned, are the same as originally made by the Board of Assessors, during those years, and the same figures were reported by that board to the Tax Commissioners for each of the years respectively. These valuations were subject to changes in each year, after such report was made, as shown by the following:—

Net valuations of estates in the City of Cambridge for the past three years, after adding the amounts of all supplementary warrants and deducting therefrom all abatements:—

Valuation for the year 1888	$61,272,860 00
Valuation for the year 1889	63,989,105 62
Valuation for the year 1890	66,260,614 10
Average net valuation per year for the three years before given	63,840,859 90

This last sum represents the amount upon which the limit of the rate of taxation, and also of municipal indebtedness, is fixed under the provisions of Chapter 312 of the Acts of the year 1885.

Following is a statement showing the actual gain in the year 1889, in the polls, valuations and dwellings, after making the necessary corrections in the assessors' tables hereinbefore given.

The additions to the number of polls, subsequent to the assessors' warrant of May 1 were 45 at $2.00 each and 267 at 50 cents each, or $66\frac{3}{4}$ at $2.00, making $111\frac{3}{4}$, and giving a total number of $19{,}221\frac{3}{4}$ polls.

Years.	Polls.	Valuation.	Dwellings.
1890	19,221¾	$66,260,614 10	10,615
1889	18,307½	63,989,105 62	10,222
Increase	914¼	$2,271,508 48	393

It has been the intent of this Committee to give in this report a concise presentation of the more important facts in

relation to its own work as connected with the finances of our city. It is always and properly the duty of the Committee on Finance to shape the appropriations for the financial year, and during such year to consider carefully and recommend such measures relating to the expenditure of the public money as in its judgment should be adopted by the City Council. Mindful of its responsibility in this direction, this Committee has sought to exercise a judicious care in reference to its various recommendations and to move always with extreme caution. No important financial measure has been recommended upon a hasty conclusion. The Committee believes that such measures as have been approved by it will also meet the approval of our city tax-payers.

HENRY H. GILMORE,
ALVIN F. SORTWELL,
FRANK H. TEELE,
EDWARD R. COGSWELL,
EDWARD A. BINGHAM,
EDWARD C. WHEELER,
JOHN S. CLARY,
HERBERT A. CHASE,
WILLIAM R. HOWLAND,
HENRY E. WARNER,

Committee on Finance.

REPORT

OF THE

CITY TREASURER.

OFFICE OF CITY TREASURER, December 1, 1890.

To the Honorable the City Council :—

I HEREWITH submit the annual report of the City Treasurer for the year ending November 30, 1890.

Said report shows that the cash balance in the treasury November 30, 1889, was	$165,496 91
The amount received into the treasury during the year ending November 30, 1890, from all sources, was	2,364,374 36
	$2,529,871 27
The authorized payments during the year amounted to . . .	2,432,899 38
Leaving a balance in the treasury November 30, 1890, of . . .	$96,971 89

Very respectfully,

WM. W. DALLINGER, *City Treasurer.*

CITY OF CAMBRIDGE IN ACCOUNT CURRENT FROM DECEMBER 1, 1889, TO

Dr.

To authorized payments charged to City Accounts as follows :

Abatements (Taxes)	$20,839 42
Bridge (Harvard)	58,078 75
Bridges	8,771 12
Bridges (West Boston, Craigie's, and Prison Point)	8,413 67
Cambridge Cemetery	15,913 53
Cambridge Public Library	11,551 57
Cemetery Fund	4,118 70
City Buildings (Care and Repairs)	10,717 49
Discounts (Taxes)	28,012 44
Engineering	8,872 54
Fire Department	56,680 16
Health Department	3,020 39
Incidental Expenses	41,726 22
Interest	119,275 15
Interest on Water Loan	82,195 00
Lighting Streets	49,100 05
Loan (City)	20,000 00
Loan (Temporary)	425,000 00
Loan (Water)	60,000 00
Pauper Department	33,116 79
Pauper Department (Almshouse)	26,998 01
Pauper Department (Salary Assistant City Physician)	1,270 85
Pauper Department (House Offal)	18,260 32
Police Department	93,665 15
Public Property (New Engine House)	6,270 95
Public Property (Incidentals)	1,585 88
Salaries	27,174 99
School Department (Incidental Expenses)	615 80
School Department (Salaries)	193,877 21
School Department (Text Books and Stationery)	12,611 94
School-houses (Care and Repairs)	36,880 25
School-houses (New and Furniture, Peabody)	1,084 00
School-houses (Land, Ward Four)	524 65
School-houses (New and Furniture, Ward Four)	24,830 72
School-houses (New and Furniture, Putnam Completion)	32,212 19
School-houses (New High)	94,162 51
Sewers (Construction)	17,508 43
Sewers (Construction, Belmont)	5,982 37
Sewers (Maintenance)	26,815 86
Shade Trees and Public Grounds	5,003 67
Sinking Funds	66,380 00
Sinking Fund of Water Works	64,890 39
State Aid	19,414 32
Stationery and Printing	5,354 07
Street Department (Paving)	21,502 29
Street Department (Paving, North River Flagging Stone)	1,000 00
Street Department (Repairs)	118,075 82
Street Department (Watering)	16,629 47
Street Department (Paving Bridge Street)	17,912 18
Street Department (Widening Brattle Street)	2,774 61
Street Department (Widening Front Street)	13,986 09
Street Department (Extension Charles River Street)	958 00
Tax (Corporation)	31 68
Tax (County)	49,851 13
Tax (National Bank)	6,423 22
Tax (State)	54,180 00
Tax Sale Surplus	277 55
Water Works (Rates, Fines, and Abatements)	4,533 40
Water Works (Supplies, Abatements)	20 99
Water Works (Construction)	46,679 44
Water Works (Construction, Fresh Pond)	198,706 89
Water Works (Rates, Fines, etc., Refunds)	2,201 30
Water Works (Construction, Stony Brook)	11,649 99
Water Works (Maintenance)	41,068 25
Water Works (Supplies)	5,659 56
Total Payments	$2,432,899 38
Cash balance in Treasury, November 29, 1890	96,971 89
	$2,529,871 27

NOVEMBER 30, 1890 (INCLUSIVE), WITH WM. W. DALLINGER, *City Treasurer.*

Cr.

By receipts as follows:

Betterments (Front Street)	$326 63
Bridges (West Boston, Craigie's and Prison Point)	605 40
Cambridge Cemetery	19,490 77
Cambridge Public Library	4,596 85
Cemetery Fund	4,118 70
City Buildings (Care and Repairs)	1,862 02
City Lands	2,250 00
Commissioners of Sinking Funds	20,000 00
Engineering	97 50
Fire Department	264 47
Incidental Expenses	8,452 34
Interest	4,183 36
Interest on Water Loan	627 77
Lighting Streets	75 80
Loan (Harvard Bridge)	5,000 00
Loan (Sewer)	15,000 00
Loan (Temporary)	425,000 00
Loan (Water)	200,000 00
Loan (High School)	100,000 00
Pauper Department	4,159 22
Pauper Department (Almshouse)	11,263 15
Pauper Department (House Offal)	7,386 33
Police Department	5,285 72
Public Property (Incidentals)	2 00
Salaries	1,500 00
School Department (Salaries)	1,360 69
School Department (Text Books and Stationery)	244 53
School-houses (Care and Repairs)	87 90
Sewers (Construction)	12,876 69
Sewers (Maintenance)	1,857 05
Shade Trees and Public Grounds	113 10
State Aid	10,863 25
Street Department (Paving)	10,857 16
Street Department (Repairs)	2,751 57
Street Department (Watering)	12,935 99
Tax (Corporation)	50,898 34
Tax (Lien Account)	14 60
Tax (National Bank)	17,563 57
Taxes, 1885	10 00
Taxes, 1886	351 32
Taxes, 1887	1,796 80
Taxes, 1888	2,123 00
Taxes, 1889	79,472 00
Taxes, 1890	997,454 56
Tax Sale Surplus	1,210 56
Trustees of Water Loan Sinking Fund	60.000 00
Water Works (Construction)	69 64
Water Works (Construction, Fresh Pond)	12,120 25
Water Works (Maintenance)	436 68
Water Works (Rates, Fines, etc.)	238,743 71
Water Works (Supplies)	6,613 37
Total Receipts	$2,364,374 36
Cash balance in Treasury, November 30, 1889	$165,496 91
	$2,529,871 27

WM. W. DALLINGER, *City Treasurer.*

REPORT

OF THE

COMMISSIONERS OF THE SINKING FUNDS OF THE CITY OF CAMBRIDGE.

To the Honorable the City Council:—

THE undersigned Commissioners of the Sinking Funds of the City, herewith present their fifteenth annual report for the year ending Nov. 30, 1890.

Dr.

Amount of funds Nov. 30, 1889	$483,060 78	
Amount received from the City of Cambridge in the annual appropriation for 1890 derived from taxation,	66,380 00	
Amount of interest received on invested funds . . .	23,389 58	
		$572,830 36

Cr.

Amount paid as accrued interest on bonds purchased for investment	$1,168 79	
Amount paid as premium on bonds purchased for investment	1,755 75	
Amount paid to the treasurer of the City to meet the bonds of the City maturing July 1, 1890	20,000 00	
Leaving the amount of the funds Nov. 30, 1890, all securities taken at par	$549,905 82	
		$572,830 36

SECURITIES BELONGING TO THE SINKING FUNDS, NOV. 30, 1890.

Cambridge Water Loan, six per cent. bonds, maturing July 1, 1892.	$1,000 00
Cambridge City Loan, five per cent. bonds, maturing Jan. 1, 1893	12,000 00
Cambridge Paving Loan, six per cent. bonds, maturing July 1, 1893	17,000 00
Cambridge Paving Loan, six per cent. bonds, maturing July 1, 1893	3,000 00
Cambridge Paving Loan, six per cent. bonds, maturing July 1, 1894	2,000 00
Amount carried forward	$35,000 00

Amount brought forward	$35,000 00	
Cambridge Sewer Loan, six per cent. bonds, maturing July 1, 1896	11,000 00	
Cambridge Street Widening Loan, six per cent. bonds, maturing July 1, 1904	90,000 00	
Cambridge Sewer Loan, six per cent. bonds, maturing July 1, 1904	2,000 00	
Cambridge Street Widening Loan, six per cent. bonds, maturing July 1, 1905	14,000 00	
Cambridge Sewer Loan, six per cent. bonds, maturing July 1, 1905	49,000 00	
		$201,000 00
Town of Brookline, $3\frac{65}{100}$ per cent. bonds, maturing Feb. 1, 1891	$7,000 00	
City of Cleveland, four per cent. bonds, maturing Oct. 1, 1891	14,000 00	
City of Dayton, five per cent. bonds, maturing Nov. 1, 1891	2,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1891	2,000 00	
Town of Brookline, $3\frac{65}{100}$ per cent. bonds, maturing Feb. 1, 1892	9,000 00	
Boston and Albany R.R. Co., seven per cent. bonds, maturing Feb. 1, 1892	34,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1892	2,000 00	
Town of Brookline, $3\frac{65}{100}$ per cent. bonds, maturing Feb. 1, 1893	8,000 00	
City of Cleveland, four per cent. bonds, maturing April 1, 1893	2,000 00	
City of Fitchburg, six per cent. bonds, maturing July 1, 1893	2,000 00	
Town of Brookline, four per cent. bonds, maturing July 1, 1893	3,000 00	
City of Brockton, four per cent. bonds, maturing July 1, 1893	2,500 00	
City of Cleveland, four per cent. bonds, maturing Oct. 1, 1893	3,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1893	2,000 00	
Town of Brookline, $3\frac{65}{100}$ per cent. bonds, maturing Feb. 1, 1894	7,000 00	
Town of Brookline, four per cent. bonds, maturing July 1, 1894	3,000 00	
City of Keene, N. H., four per cent. bonds, maturing July 1, 1894	2,000 00	
City of Brockton, four per cent. bonds, maturing July 1, 1894	2,500 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1894	2,000 00	
City of Fitchburg, four per cent. bonds, maturing Nov. 1, 1894	3,500 00	
Amounts carried forward	$112,500 00	$201,000 00

Amounts brought forward	$112,500 00	$201,000 00
Town of Brookline, $3\frac{65}{100}$ per cent. bonds, maturing Feb. 1, 1895	1,000 00	
City of Brockton, four per cent. bonds, maturing July 1, 1895	2,500 00	
City of Keene, N. H., four per cent. bonds, maturing July 1, 1895	1,000 00	
City of Dayton, four per cent. bonds, maturing Oct. 1, 1895	7,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1895	2,000 00	
City of Dayton, four per cent. bonds, maturing Oct. 1, 1896	7,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1896	2,000 00	
City of Fitchburg, four per cent. bonds, maturing Nov. 1, 1896	2,000 00	
City of Waltham, four per cent. bonds, maturing Jan. 1, 1897	6,000 00	
City of New Bedford, $3\frac{1}{2}$ per cent. registered bond, maturing April 1, 1897	15,000 00	
City of Dayton, four per cent. bonds, maturing Oct. 1, 1897	7,000 00	
Town of Hyde Park, four per cent. bonds, maturing Nov. 1, 1897	2,000 00	
City of Fitchburg. $3\frac{1}{2}$ per cent. registered bond, maturing April 1, 1898	10,000 00	
City of Cleveland, four per cent. bonds, maturing Sept. 1, 1898	1,000 00	
City of Dayton, four per cent. bonds, maturing Oct. 1, 1898	4,000 00	
City of Providence, $4\frac{1}{2}$ per cent. bonds, maturing June 1, 1899	64,000 00	
City of Cleveland, $3\frac{65}{100}$ per cent. bonds, maturing Sept. 1, 1902	1,000 00	
City of Lawrence, four per cent. bonds, maturing July 1, 1904	12,000 00	
City of Pawtucket, four per cent. bonds, maturing July 1, 1904	15,000 00	
Town of Hopkinton, four per cent. bonds, maturing Sept. 30, 1904	5,000 00	
City of Pawtucket, four per cent. bonds, maturing July 1, 1909	30,000 00	
Town of Beverly, four per cent. bonds, maturing July 1, 1911	9,000 00	
City of Brockton, $3\frac{1}{2}$ per cent. bonds, maturing July 1, 1916	5,000 00	
		$323,000 00
		$524,000 00
Cash in Bank on interest		25,905 82
Total assets		$549,905 82

The bonded city debt, which the foregoing sinking funds are expected to pay, matures as follows, viz: —

Jan. 1, 1893, City Loan bonds, five per cent. gold	$150,000 00
July 1, 1893, Land Loan bonds, six per cent	10,000 00
July 1, 1893, Paving Loan bonds, six per cent	100,000 00
July 1, 1893, Street Loan bonds, six per cent	13,000 00
July 1, 1894, Paving Loan bonds, six per cent	130,000 00
April 1, 1895, Municipal Loan bond, four per cent	200,000 00
July 1, 1895, Paving Loan bonds, six per cent	25,000 00
Oct. 1, 1895, Sewer Loan bonds, six per cent	20,000 00
July 1, 1896, Sewer Loan bonds, six per cent	29,000 00
Nov. 1, 1896, Sewer Loan bonds, six per cent	25,000 00
Aug. 1, 1898, City Hall Land Loan bonds, four per cent	83,000 00
Nov. 1, 1899, Street Widening Loan bonds, four per cent	8,000 00
May 1, 1900, High School Loan bonds. four per cent	100,000 00
July 1, 1903, Sewer Loan bonds, six per cent	136,000 00
July 1, 1903, Street Widening Loan bonds, six per cent	10,000 00
July 1, 1904, Sewer Loan bonds, six per cent	295,000 00
July 1, 1904, Street Widening Loan bonds, six per cent	90,000 00
July 1, 1905, Sewer Loan bonds, six per cent	144,000 00
July 1, 1905, Street Widening Loan bonds, six per cent	14,000 00
Aug. 1, 1905, Cambridge Cemetery Extension Loan } bond, four per cent	65,000 00
Nov. 1, 1907, Sewer Loan bonds, four per cent	30,000 00
Nov. 1, 1909, Sewer Loan bonds, four per cent	22,000 00
May 1, 1910, Sewer Loan bonds, four per cent	15,000 00
Oct. 1, 1917, Harvard Bridge Loan bond, four per cent	10,000 00
July 1, 1918, Harvard Bridge Loan bonds, four per cent	100,000 00
Sept. 1, 1918, Harvard Bridge Loan bonds, four per cent	50,000 00
Sept. 1, 1918, Harvard Bridge Loan (Front St. extension) } bonds, four per cent	50,000 00
March 1, 1919, Harvard Bridge Loan bonds, four per cent	90,000 00
March 1, 1919, Harvard Bridge Loan (Front St.) } bonds, four per cent	25.000 80
Nov. 1, 1920, Harvard Bridge Loan bond, four per cent	5,000 00
	$2,044,000 00

During the year the funded debt of the City has increased $120,000.00, for which four per cent. bonds have been issued for the following purposes, viz: For the new High School building $100,000.00, dated May 1, 1890, and payable in ten years. For Sewer Loan $15,000.00, dated May 1, 1890, and payable in twenty years. For the new avenue to the Harvard Bridge $5,000.00, dated November 1, 1890, and payable in thirty years. City six per cent. bonds to the amount of $20,000.00, matured July 1, and were paid from the fund. Deducting amount paid, from above amount of bonds issued, shows the net increase of

the debt for the year $100,000.00. The total amount of city debt now outstanding is $2,044,000.00, from which deducting the present amount of Sinking Fund assets at the par, $549,905.82, leaves the net liability for bonded debt, December 1, 1890 (exclusive of Water debt), $1,494,094.18. No portion of the city debt proper will become due until 1893, when $273,000.00 of bonds will mature, and be met from the fund. The present valuation of the city for 1890, is $67,471,925.00, and shows a gain for the year over 1889, of $2,451,925.00. The fund has increased, since our last report, $66,845.04.

Respectfully submitted,

CHAS. H. SAUNDERS,
JOS. A. HOLMES,
JOHN C. BULLARD,
A. J. LOVELL,
GEO. H. HOWARD,
FRANK A. ALLEN,
Commissioners of the Sinking Funds of the City of Cambridge.

CAMBRIDGE, Dec. 17, 1890.

CAMBRIDGE, Dec. 15, 1890.

The Sub-Committee of the Sinking Funds respectfully reports, that it has examined the books and accounts of the Treasurer of the Funds, and finds them properly kept, accurately cast, with vouchers for every transaction.

Your committee also estimated the present condition of the fund, independent of the Treasurer's books, with the following result, which agrees with his accounts, viz: —

Amount of Funds, Nov. 30, 1889		$483,060 78
Interest due on same		22,907 00
" " on bonds purchased in 1890		370 00
" " from National Bank on deposits		112 58
Amount due from city from taxation		66,380 00
		$572,830 36
Amount paid to redeem maturing city debt (bonds)	$20,000 00	
" " for premium on Bonds bought	1,755 75	
" " accrued interest on Bonds bought	1,114 73	
" " for interest to City Treasurer for advance payments	54 06	
		22,924 54
Par value of Fund Nov. 30, 1890		$549,905 82

Invested as follows :—

Amount of Cambridge City Bonds on hand, Nov. 30, 1889.		187,000 00
Amount of Cambridge City Bonds bought in 1890		14,000 00
Amount City of Cambridge Bonds on hand, Nov. 30, 1890		$201,000 00
Amount of other Bonds on hand, Nov. 30, 1889	$296,000 00	
Amount of other Bonds bought in 1890	39,000 00	
	$335,000 00	
Amount of same matured and sold in 1890	12,000 00	
Amount of other Bonds on hand, Nov. 30, 1890		323,000 00
Total amount of Bonds on hand, Nov. 30, 1890		$524,000 00
Amount of cash on hand, Nov. 30, 1890, deposited in National Bank on interest		25,905 82
Total amount of Fund at par, Nov. 30, 1890		$549,905 82

Respectfully submitted,

FRANK A. ALLEN,
JOHN C. BULLARD, } *Sub-Committee.*

REPORT

OF THE

TRUSTEES OF THE SINKING FUND OF THE CAMBRIDGE WATER WORKS.

To the Honorable the City Council:

THE undersigned Trustees of the Sinking Fund of the Cambridge Water Works herewith submit their annual report of the fund committed by law to their charge:—

Dr.

The amount of the fund at the last report, November 30, 1889, was.	$728,658 53	
Amount received from the City Treasurer of Cambridge, the same being a part of the annual Water rates and equal to three per cent. on the total amount of outstanding Water loan bonds. .	48,945 00	
Amount received as *surplus* in the running accounts of the Water Works for the year ending Nov. 30, 1890	15,945 39	
Amount of interest received on investments . . .	32,414 59	
		$825,963 51

Cr.

Amount paid the City Treasurer of Cambridge to pay the Water loan bonds which matured July 1, 1890	$60,000 00	
Amount paid as accrued interest on bonds purchased for investment	36 34	
Amount paid as premium on bonds purchased for investment	172 50	
Balance, representing the amount of the fund November 30, 1890, all securities estimated at their par value	765,754 67	
		$825,963 51

SECURITIES BELONGING TO THE SINKING FUND OF THE WATER WORKS, NOVEMBER 30, 1890.

Cambridge Water Loan, six per cent. bonds, maturing May 1, 1891	$26,000 00	
Cambridge Water Loan, six per cent. bonds, maturing July 1, 1892	8,000 00	
Cambridge Water Loan, four per cent. bonds, maturing Nov. 1, 1894	6,000 00	
Cambridge Water Loan, six per cent. bonds, maturing April 1, 1895	37,000 00	
Cambridge Water Loan, 3½ per cent. registered bonds, maturing after April 1, 1896	100,000 00	
Cambridge Water Loan, 3½ per cent. registered bonds, maturing after July 1, 1896	75,000 00	
Cambridge Water Loan, six per cent. bonds, maturing July 1, 1896	46,000 00	
Cambridge Water Loan, six per cent. bonds, maturing July 1, 1897	16,000 00	
Cambridge Water Loan, five per cent. bond, maturing July 1, 1898	12,500 00	
Cambridge Contingent Loan, four per cent. note, dated Dec. 1, 1883	200,000 00	
Harvard Bridge Loan, four per cent. bond, maturing Nov. 1, 1920	5,000 00	
		$531,500 00
Town of Hyde Park, four per cent bonds, maturing July 1, 1891	5,000 00	
City of Salem, four per cent. bonds, maturing July 1, 1892	17,000 00	
Town of Arlington, five per cent. bonds, maturing July 1, 1898	12,000 00	
City of Boston, four per cent. bonds, maturing Jan. 1, 1899	50,000 00	
City of Lynn, four per cent. bond, maturing July 1, 1899	11,000 00	
City of Boston, four per cent. bond, maturing April 1, 1900	4,000 00	
City of Cleveland, O.. $3\frac{65}{100}$ per cent. bonds, maturing Sept. 1, 1902	3,000 00	
City of Providence, five per cent. bonds, maturing July 1, 1906	50,000 00	
Town of Winchester, four per cent. bonds, maturing May 1, 1908	10,000 00	
		162,000 00
		$693,500 00
Cash in Bank on interest		72,254 67
		$765,754 67

The bonded water debt which the foregoing fund is expected to pay, matures as follows, viz.:—

May 1, 1891, six per cent. coupon	50,000 00
July 1, 1892, six per cent. coupon	335,000 00
April 1, 1894, six per cent. coupon	150,000 00
Nov. 1, 1894, four per cent. coupon	36,000 00
April 1, 1895, six per cent. coupon	160,000 00
April 1, 1896, 3½ per cent. registered (or to April 1, 1911)	100,000 00
July 1, 1896, six per cent. coupon	103,000 00
July 1, 1896, 3½ per cent. registered (or to July 1, 1911)	75,000 00
July 1, 1897, six per cent. coupon	16,000 00
July 1, 1898, five per cent. registered	12,500 00
Nov. 1, 1906, 3½ per cent. registered	43,000 00
Oct. 1, 1907, four per cent. registered	75,000 00
Oct. 1, 1907, four per cent. registered	15,000 00
Nov. 1, 1907, four per cent. registered	22,000 00
July 1, 1908, four per cent. coupon	46,000 00
Aug. 1, 1908, four per cent. coupon	25,000 00
Nov. 1, 1909, four per cent. coupon	20,000 00
May 1, 1910, four per cent. registered	133,000 00
May 1, 1910, four per cent. coupon	155,000 00
July 1, 1910, four per cent. coupon	75,000 00
Sept. 1, 1910, four per cent. coupon	125,000 00
	$1,771,500 00

The fund has increased during the year $37,096.14; $60,000 of water bonds which matured July 1, 1890, were duly paid. The City Council has issued new water loan obligations for the payment for land on the borders of Fresh Pond, amounting to $200,000, so that the gross bonded water debt is $140,000 larger than one year ago, but the *net* water debt is only $102,903.86 larger than it was one year ago.

HENRY H. GILMORE,
EDWARD A. BINGHAM,
WM. W. DALLINGER,
Trustees of the Sinking Fund of the Cambridge Water Works.

REPORT

OF THE

TRUSTEES OF THE DOWSE INSTITUTE.

CAMBRIDGE, Dec. 30, 1890.

To the Honorable City Council of Cambridge:—

THE Board of Trustees of the Dowse Institute respectfully reports that a course of six lectures, with one reading and a concert, was given in Union Hall, Cambridgeport, beginning Oct. 10, 1889, and ending Dec. 17, 1889.

An attested copy of the accounts of the Treasurer is herewith transmitted, showing the amount of receipts and expenditures.

W. W. WELLINGTON,
W. A. BULLARD,
FRANK A. ALLEN,
HENRY H. GILMORE,
EDWARD A. BINGHAM,
} *Board of Trustees.*

W. A. BULLARD, TREASURER, IN ACCOUNT WITH THE DOWSE INSTITUTE.

Dr.

To balance from last account	$303 34	
City of Cambridge, one year's interest on fund . .	600 00	
Tickets to the course of entertainments	675 50	
		$1,578 84

Cr.

By H. C. Barnabee and others for a concert . . .	185 00	
Henry A. Clapp, for a lecture	75 00	
Mary Gregory, for a lecture	52 50	
Rev. Brooke Herford, for a lecture	50 00	
Prof. Charles E. Fay, for a lecture	60 00	
Geo. M. Towle, for a lecture	35 00	
Geo. W. Cable, for a lecture	100 00	
Prof. J. W. Churchill, for a reading	100 00	
John Ford & Son, for printing	44 50	
F. M. Buffum, distributing circulars	14 75	
Geo. E. French, " "	1 95	
F. L. Beunke, " "	2 25	
Cambridge Tribune, advertising	10 50	
Cambridge Chronicle, "	12 00	
Cambridge Press, "	10 00	
Cambridge News, "	12 00	
Cambridge Daily	8 00	
Union Hall Association, rent of hall	320 00	
C. L. Russell, door-keeper	8 00	
F. M. Buffum, "	8 00	
Albert Buffum, "	6 00	
Ralph L. Stevens, ticket-seller	8 00	
Geo. F. Dickson, for lamp	1 00	
	$1,124 45	
Balance	454 39	
		$1,578 84

ATTEST, W. A. BULLARD, *Treasurer.*

REPORT

OF THE

TRUSTEES OF THE BRIDGE CHARITABLE FUND.

The Trustees of the Bridge Charitable Fund herewith submit the fourteenth annual report of the condition of the fund.

The sum representing the fund continues to be on deposit at the Cambridgeport Savings Bank.

The amount on deposit to the credit of the fund Nov. 30, 1889, was,	$2,554 53
Interest to July 19, 1890	103 18
Amount on deposit Nov. 30, 1890	$2,657 71

The Bridge Charitable Fund was founded by Levi Bridge who died in this city in the year 1876. Under the provisions of the original bequest a certain part of the interest accruing to the fund is payable to the Overseers of the Poor, and to be expended by them for certain purposes. A portion of the interest is now due and payable to that board, and the fund is therefore subject to a slight reduction by the amount so payable.

Full information concerning this fund may be obtained from former City Documents, and the records of the Trustees, and those interested are referred to these sources.

HENRY H. GILMORE,
EDWARD A. BINGHAM,
WILLIAM T. PIPER,
} *Trustees.*

REPORT

OF THE

TRUSTEES OF THE SANDERS TEMPERANCE FUND.

The Trustees of this fund herewith present their annual report, it being the twenty-fifth since the reception of the Sanders bequest.

There is but little to be said in reference to this subject except that the terms of the bequest have been complied with by the present Board of Trustees.

Mr. Alonzo Stewart, the venerable missionary heretofore appointed, has been continued in the philanthropic service to which he has been so long accustomed. His labors in this wide field of duty have been performed with increased earnestness and with the best results not only to those with whom he has been brought into immediate contact, but to the entire community.

The amount of the Sanders Temperance Fund is $10,000.00, which sum is held in the City Treasury, and the interest thereon at six per cent. is paid to the missionary as his only compensation for his work.

HENRY H. GILMORE,
JOHN R. FAIRBAIRN,
EDWARD A. BINGHAM,
J. HENRY RUSSELL,
CHAS. W. CHENEY,
} *Trustees.*

REPORT

OF THE

SANDERS TEMPERANCE FUND MISSIONARY.

To the Trustees of the Sanders Temperance Fund:—

GENTLEMEN:—Your missionary would be very glad to report a bountiful harvest, but seeing as he does the great field for work he feels the results are meagre. Doubless seeds of good have been sown that may spring up and bear fruit long after the sower has gone to his rest.

Nearly the same line of action has been followed as in former years, with an earnest desire to comply with the expressed wishes of the founder of this Mission.

Conversations have been held with one thousand two hundred and sixty-six persons who have been brought before the court for drunkenness and kindred vices. Seventy-seven thousands two hundred and sixty-three pages of temperance and religious literature have been distributed, after having been collected by personal solicitation and effort.

Many temperance meetings have been attended. Pledges of total abstinence from intoxicating drinks have been taken from all who, apparently, would be helped thereby.

All sessions of the Police Court have been attended, except during vacations and when detained by illness.

Almost every Sunday the House of Correction has been visited and helpful words spoken to the weak, with the hope of encouraging them to overcome the habit which causes more wretchedness, want and woe than all other vices combined.

The benefits of the no-license system can be seen by comparing those who appear before the court *now* with those of *past years*. Nearly all the prisoners now are old offenders. Very few respectable looking young people are found there.

May we all be so faithful in meeting our responsibilities toward the weak and erring that, when we stand before the Judge of "the quick and the dead," we may hear the blessed words: "Inasmuch as ye have done it unto one of the least of these, my brethren, ye have done it unto me."

Respectfully submitted,

ALONZO STEWART,

Sanders Temperance Fund Missionary.

January 5, 1891.

REPORT

OF THE

OVERSEERS OF THE POOR.

OFFICE OF THE OVERSEERS OF THE POOR,
CENTRAL SQUARE BUILDING, CAMBRIDGEPORT, Dec. 29, 1890.

To the Honorable the City Council of the City of Cambridge: —

GENTLEMEN: The Board of Overseers of the Poor of the City of Cambridge herewith respectfully submits its thirteenth annual report under the new system inaugurated in May 1877.

During the past year the city has lost the valued services of Sumner Albee, Esq., and William W. Burrage, Esq. was elected by the City Council in his place. Mr. Albee, after a continuous connection with the Board since its organization, resigned his office, and addressed the following letter to the Board:

30 ESSEX ST., CAMBRIDGEPORT, May 26, 1890.

To the Overseers of the Poor of the City of Cambridge: —

GENTLEMEN: I hereby resign my office as a member of your Board.

For many reasons I regret this step. My relations with all the members of the Board and its officers, with all the officials of the Almshouse, and all others with whom I have had to do, has always been so pleasant and cordial, and my sympathy for and interest in the unfortunate class who are supported, in whole or in part, at the public expense is so great, that I am sorry indeed to sunder the official ties that have so long bound us together. But duties which I owe, not only to myself, but to others as well, make it, as I think, imperative.

Very respectfully and sincerely yours, etc.,

SUMNER ALBEE.

In response to this communication the following action was taken:

The Board has received with regret a communication from Sumner Albee, Esq. who has been a member of the Overseers of the Poor since its reorganization in May, 1877, tendering his resignation.

In view of his fidelity to this service, his marked ability, and experience in the law so frequently brought to bear upon mat-

ters relating to the administration of this department, his active "sympathy for, and interest in, the unfortunate class supported in whole, or in part, at the public expense," together with the exceedingly pleasant relations that have continuously existed between himself and his associates on the Board, we are prompted to express the fervency of our regard for him both as an official, and an honorable and high-minded gentleman. It is, therefore,

Voted that this expression of esteem, and of regret, be spread upon the records and a copy forwarded to Mr. Albee by the secretary.

In April last by action of the City Council the Board lost another efficient member, Mr. Michael Corcoran, Dr. Charles Bullock having been elected in his stead for a period of five years. The Board wishes to testify to its recognition of Mr. Corcoran's active interest in the cause of the poor and his faithfulness in the discharge of his duty as a member of the Board.

Outside Aid.

Number of histories taken of new applicants			487
Males . . . 527.	Adults . . . 395.		
Females . . . 784.	Minors . . . 916.		
" settled in Cambridge			187
" " in other cities and towns			75
" having no settlement			248
" of histories revised during the year			75
" of histories now on file			6,592

These histories are contained in 56 volumes covering the facts of settlement of about 20,000 persons, forming an invaluable record for reference. Your Board in previous reports has respectfully called attention to the importance of having these volumes carefully preserved from loss by fire by storage in some suitable vault, and would again urge this upon your attention.

Number of persons embraced in the 437 histories taken during the year	1,311
" of visits to the poor of Cambridge and elsewhere	2,532
" days partly passed in examination of tax records	303
" of families aided from the office during the year	394
" of persons aided from the office during the year	1,297

Dr. Lewis L. Bryant, the Assistant City Physician, in his report herewith submitted shows that he has attended 614 pau-

pers during the year, and made 1,564 visits outside of the Almshouse. He has examined 59 persons relative to their insanity, and has issued 50 certificates of insanity, 34 being for men and 16 for women. There have been 18 women attended in childbirth. There have been 20 deaths outside of the Almshouse during the year. Certificates of death in 81 cases of persons dying without a physician have been delivered to the city clerk.

The action of the City Council in increasing the salary of the Assistant City Physician from $1250 to $1500 was in the opinion of the Board a wise measure, the previous salary being entirely inadequate to the amount of work performed.

The Board also is gratified by the action of the City Council by which the salary is charged to the pauper department, in order that medical services rendered to patients not settled in Cambridge may be collected from the cities and towns to which said patients belong, or from the State.

The Board regrets that its suggestion made to the City Council last year, in regard to the employment of a city nurse, was not carried out. It is more firm than ever in the belief that the employment of such a nurse is very important to supplement the work of the Assistant City Physician by attention to the details of treatment, and by the efforts to improve the hygienic conditions of the homes. The Board feels that this would be not only a wise economy, but a humane measure to adopt.

The number of paupers supported by the city at the various iustitutions within the last year was as follows: —

City Almshouse	236
State Lunatic Hospitals	131
Middlesex House of Correction	8
Massachusetts School for Feeble-minded	6
	381
Number of insane in families	2
	383

The expenditures for outside aid have been $30,447.46. The insane patients at the State Lunatic Hospitals, together with two female insane cases boarded in families, have cost the city $15,358.08.

The insane hospital cases include 18 at the Danvers Hospital, 57 at the Worcester Lunatic Hospital, 18 at the Worcester In-

sane Asylum, 6 at the Taunton Hospital, 2 at the Northampton Hospital, 24 at the Westboro Hospital, 4 in the insane ward of the State Almshouse at Tewksbury, and 2 in the insane ward of the State Farm at Bridgewater. Two insane women have been boarded out in families during the year.

The expense for the insane has been reduced to a large extent by supporting 27 mildly insane at the Almshouse. Some of these cases have been transferred to the institution during the year from the State lunatic hospitals. The Board feels that if additional facilities could be provided by the city, it would be advisable for many reasons to increase this number of mildly insane to be taken care of at the Almshouse now so limited by want of space. The present system of boarding this class of patients in families, now being carefully tested by the State Board of Lunacy and Charity, may afford a proper and sufficient substitute.

The amount paid for support of paupers outside of the Almshouse is constantly increasing, from the fact that the State legislation is in that direction. The law prohibits children above the age of four years from being supported in an almshouse, so that this item of expense is becoming quite large from year to year. Sixteen of this class have been supported in families during the year.

It will be noticed that the amount expended for fuel the present year has been less, inasmuch as provision was made last year for the building of two coal sheds, and a supply for them for the year was provided. The present system of buying and storage has been greatly beneficial to the city as well as ensuring a more speedy delivery of fuel to the poor. The coal and wood used for applicants of wards one and five is kept in the shed at the Almshouse, and the cases in wards two, three and four, are supplied from the shed in the city yard on Norfolk Street.

A typewriter has been purchased for the office during the year. This, with the valuable services of Miss Benson as clerk and operator, has proved a wise economy in furnishing more speedy facilities for increasing correspondence, the making of bills, and other forms of writing required.

The receipts for outside aid have been $4,159.22, an increase of $320.10 over the previous year. The net cost of the support of the poor outside of the Almshouse has been $26,288.24, which

the Board is glad to say is $2,258.79 less than the preceding year. A part of this is due to the saving in cost of fuel, and other favorable circumstances which may not exist another year. The relatives of insane, and other persons, supported by the city have paid $1,755.06 into the city treasury. Other cities and towns have reimbursed the city to the amount of $1,158.62 for aid rendered their poor living in Cambridge. The State Treasurer has paid $1,245.54 for the support of cases having no settlement which were aided from the office of the Board.

Almshouse.

The management of the institution has continued for another year under Capt. Martin L. Eldridge and his wife, the matron, to the entire satisfaction of the Board.

Total number of inmates during the year	236
" " present, Nov. 30, 1890	128
Average monthly number	132
Number admitted during the year	95
" sentenced by the court	20
" committed as neglected children	5
" sentenced as truants	15
" of adults present during the year	153
" of minors present during the year	83
" discharged during the year	108
" Number of insane, or demented, present, Nov. 30, 1890	27
Males . . . 7. Females . . . 20.	
" of idiotic, or imbecile, present, Nov. 30, 1890	2
Male . . . 1. Female . . . 1.	
" of epileptics present, Nov. 30, 1890	3
Males . . . 2. Female . . . 1.	
" discharged during the year to Carney Hospital	1
" " " " Cambridge Hospital	1
" " " " Children's Hospital, Boston	1
" " " " Insane Asylum, Worcester	2
" " " " State Almshouse, Tewksbury	4
" " " " State Home, Boston Highlands	1
" present, Nov, 30, 1890	128
Males . . . 70. Females . . . 58.	
Adults . . . 94. Minors . . . 34.	
Boys . . . 24. Girls . . . 10.	

Number attending school, Nov. 30, 1890		26
Boys . . . 22.	Girls . . . 4.	
" attending school during the year		62
" of neglected children present, Nov. 30, 1890		5
" truant " " "		15
" pauper " " "		4
" in Almshouse for five years ending Nov. 30, 1890		845
Men . . . 334.	Women . . . 217.	
Boys . . . 209.	Girls . . . . 85.	

The Assistant City Physician reports 168 visits to the Almshouse, and 99 persons treated therein. He has made 1,769 professional visits to the patients. There have been two chronic insane recommitted to the insane asylums. There were 12 patients in the hospital wards Nov. 30, 1890. There have been 12 deaths in the institution during the year, 6 males and 6 females, the oldest in years being 89 and the youngest 19.

The employment of the boys in seating cane chairs continues to bring good results, and affords a small revenue to the city.

Rev. F. W. Holland has officiated as Chaplain of the Almshouse during the year to the satisfaction of the Board.

Miss Alice Fawcett has added another year of faithful and efficient service as teacher of the Almshouse school.

The schedule of personal property, reported by the Superintendent, shows a valuation of $16,434.40.

The pressing need of better hospital accommodations is referred to in the reports of the Assistant City Physician and the Superintendent. The Board would call the attention of the City Council to this matter in the hope that a speedy solution of the problem may be attained.

The bathing facilities have been greatly improved during the past year, and are now believed to be equal to any in the state.

A building should be provided where the children could be kept by themselves, as exists in Boston, Lynn, and other cities.

The expenditures for the Almshouse for the year have been $20,592,05, and the receipts have been $1,247.74, leaving a net cost of $19,264.31, a decrease of $1,655.68 over the preceding year.

Farm and Ledge.

The Board feels a special pride in the management of these branches of the pauper department, the largest revenue ever

obtained having been received the past year. In this connection particular attention is called to the carefully tabulated statement of the Superintendent, showing the large increase in the receipts during the last five years, and under the present management.

A careful system of book-keeping by double entry shows the exact account of this revenue as well as all expenditures, and these books are always open for the critical inspection of the Board.

The farm has become highly productive under the able direction of Mr. James Welch, and the sales of the products have been carefully made with excellent results.

The city ledge has been worked to advantage during the year, and good receipts obtained.

Several able-bodied men, who have applied for aid at the office of the Board, have been required to work at the ledge, and have received groceries, fuel, and shoes, in return for their labor.

The expenditures for the farm and ledge have been $6,021.58, and the revenue has been $10,015.41, leaving an excess of $3,993.83, which is $583.08 less than the previous year.

House Offal.

The Overseers of the Poor have continued their voluntary charge of this department for another year.

Expenditures for collection	$18,044 75
Receipts	7,386 33
Net cost	$10,658 42

The appropriation made by the City Council for the financial year was as follows: —

Pauper Department, Outside Aid	28,500 00
" " Almshouse	17,000 00
" " House Offal	11,500 00
	$57,000 00

The estimated revenue was: —

Pauper Department, Outside Aid	4,000 00
" " Almshouse	9,500 00
" " House Offal	7,000 00
	$20,500 00

Recapitulation.

Total expenditures, Outside Aid	$30,447 46
Total receipts, " "	4,159 22
Net cost.	$26,288 24
Total expenditures, Almshouse, farm and ledge . .	26,533 63
Total receipts, " " . .	11,263 15
Net cost.	$15,270 48
Total expenditures, exclusive of house offal	56,981 09
Total receipts, " "	15,422 37
Net cost of care of the poor	$41,558 72

Respectfully submitted,

HENRY H. GILMORE,
CHARLES E. VAUGHAN,
CHARLES WALKER,
STEPHEN ANDERSON,
CHARLES BULLOCK,
WM. W. BURRAGE,
} *Overseers of the Poor.*

REPORT

OF THE

SUPERINTENDENT OF THE ALMSHOUSE

CAMBRIDGE, Dec. 1, 1890.

To the Overseers of the Poor:—

GENTLEMEN: The annual report of the Almshouse for the year ending Nov. 30, 1890, is herewith respectfully submitted.

The whole number in the Almshouse during the year was as follows:

Males	144
Females	92
Total	236
Adults	153
Minors	83
Whole number in the Almshouse Nov. 30, 1890	128
Average number during the year	132

The whole number in the Almshouse for five years ending Nov. 30, 1890, is as follows:

Men	334
Women	217
Boys	209
Girls	85
Total	845

Included in the whole number in the Almshouse Nov. 30, 1890, there are:

INSANE OR DEMENTED.

Males	7
Females	20
Total	27

IDIOTIC OR IMBECILE.

Males	1
Females	1
Total	2

EPILEPTICS.

Males	2
Females	1
Total	3

Included in the whole number discharged during the year are the following:

To Cambridge Hospital	1
To Carney Hospital	1
To Children's Hospital, Boston	1
To Insane Asylum, Worcester	2
To State Almshouse, Tewksbury	4
To State Home, Boston Highlands	1

Remaining in the Almshouse, Nov. 30, 1890:

Males	70
Females	58
Total	128
Adults	94
Minors: Boys 24, Girls 10	34

Whole number of children attending school Nov. 30, 1890:

Boys	22
Girls	4
Total	26
Total during the year	62

Of the boys remaining Nov. 30, 1890, there are:

Neglected children	5
Pauper children	4
Truant children	15
Total	24

Of the girls there are:

Neglected children	2
Pauper children	8
Total	10

The following tables will show the changes in population, the deaths, the farm products, and the financial receipts for ten years ending Nov. 30, 1890:

Table I,

Showing the number and sex of adult persons and minors of all classes received into the Almshouse in each month of the year ending Nov. 30, 1890:

Months.	Adults.		Minors.		Total.	Neglected Children.		Pauper Children.		Truant Children.	
1887	*M.*	*F.*	*M.*	*F.*		*M.*	*F.*	*M.*	*F.*	*M.*	*F.*
December.....	2	3	1	0	6	0	0	1	0	0	0
1890											
January.....	3	8	1	3	15	0	0	1	3	0	0
February.....	1	1	2	0	4	0	0	1	0	1	0
March.....	2	4	1	0	7	0	0	1	0	0	0
April..... ...	3	1	1	2	7	0	1	0	1	1	0
May.....	1	0	7	2	10	3	1	0	1	4	0
June.	2	2	3	1	8	0	0	2	1	1	0
July.....	2	4	3	1	10	0	0	3	1	0	0
August.....	2	0	0	0	2	0	0	0	0	0	0
September.....	3	1	1	0	5	0	0	0	0	1	0
October	3	1	5	1	10	0	0	1	1	4	0
November.....	7	1	3	0	11	0	0	0	0	3	0
Totals	31	26	28	10	95	3	2	10	8	15	0

Table II,

Showing the number and sex of adult persons and minors of all classes discharged from the Almshouse in each month of the year ending Nov. 30, 1890:

Months.	Adults.		Minors.		Total.	Neglected Children.		Pauper Children.		Truant Children.		Boarders	
1889	*M.*	*F.*	*M.*	*F.*		*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*
December..	3	2	4	1	10	0	0	4	1	0	0	0	0
1890													
January....	3	5	3	0	11	0	0	1	0	2	0	0	0
February...	2	3	4	0	9	1	0	1	0	2	0	0	0
March	3	4	1	2	10	0	1	0	1	1	0	0	0
April.....	6	1	1	1	9	0	1	1	0	0	0	0	0
May	7	2	6	3	18	1	2	1	1	3	0	1	0
June.....	2	2	4	1	9	0	0	2	1	1	0	1	0
July	1	2	3	0	6	0	0	3	0	0	0	0	0
August.....	2	1	2	1	6	0	1	0	0	2	0	0	0
September .	2	1	2	0	5	0	0	1	0	1	0	0	0
October .. .	3	1	4	1	9	0	0	0	1	4	0	0	0
November..	1	0	5	0	6	0	0	1	0	4	0	0	0
Totals	35	24	39	10	108	2	5	15	5	20	0	2	0

Table III,

Showing the name, age, time of admission, date and cause of death of each person who has died in the Almshouse during the year ending Nov. 30, 1890:

Names.	Age.	Date of Admission.	Date of Death.	Cause of Death.
Wiiliam D. Whittemore.	67	Dec. 24, 1883	Dec. 2, 1889	Pulmonary congestion.
Peter New.....	69	Feb. 16, 1888	Dec, 6, 1889	Senile debility.
Ann Trefethen.....	55	Jan. 6, 1890	Feb. 3, 1890	Consumption.
Susan Forsyth.....	80	May 5, 1885	Feb. 7, 1890	Senile debility.
Mary Carpenter.....	43	Mar. 9, 1890	Mar. 13, 1890	Heart disease.
Mary Sullivan.....	66	Feb. 25, 1890	Mar. 2, 1890	Heart disease.
Bridget McCarthy.....	89	Sept. 12, 1887	Apr. 29, 1890	Apoplexy.
Lewis Cass.....	60	Jan. 20, 1890	May 31, 1890	Cancer.
Ella Williams.....	19	July 3, 1890	Aug. 2, 1890	Consumption.
Thomas Byrne.....	66	Apr. 19, 1890	Aug. 21, 1890	Apoplexy.
Robert Barrett.....	65	Sept. 3, 1890.	Sept. 17, 1890	Typhoid fever.
Dennis Martin.....	84	June 15, 1875	Nov. 9, 1890	Senile debility.

Products of the Farm.

2 barrels of apples	$6 00
250 bushels of beans	250 00
350 bushels of beets	230 00
80 bushels of beet greens	16 00
10,000 cabbages	500 00
cabbage plants, sage and parsley	25 00
600 boxes celery	2100 00
celery plants	111 25
20,000 cucumbers	480 00
300 bushels dandelion greens	300 00
2 bushels grapes	3 00
7 tons of hay and straw	130 00
400 dozen hot-bed lettuce	160 00
400 dozen out-door lettuce	70 00
250 bushels of onions	150 00
300 bushels of parsnips	240 00
180 bushels of peas	170 00
5,151 pounds pork	315 92
100 bushels potatoes	125 00
350 bushels spinach	100 00
2 tons squash	30 00
500 bushels tomatoes	400 00
	$5,912 17

Comparative Table of Almshouse, Farm, Ledge and House Offal Receipts for Ten Years, ending November 30, 1890.

Years.	Board.	Chair Shop.	Farm Produce.	General Sales.	Stone.	House Offal.	Totals.
1881	$322 56	.....	$378 50	.....	$2,529 01	$5,536 88	$8,766 95
1882	705 34	.....	436 54	.....	2,626 17	5,705 22	9,473 27
1883	1,174 96	.....	476 22	$14 19	2,622 00	5,819 55	10,106 92
1884	1,480 93	.....	316 76	.....	4,238 77	6,449 96	12,486 42
1885	2,035 78	.....	335 32	149 85	4,509 84	7,354 36	14,384 95
1886	613 93	37 50	772 14	319 75	5,611 38	6,926 23	14,280 93
1887	514 64	634 19	1,595 10	241 37	4,684 14	6,856 59	14,526 03
1888	557 28	614 94	2,846 52	213 62	6,662 20	6,721 50	17,616 06
1889	274 84	479 28	3,684 59	144 36	5,564 18	7,324 61	17,471 86
1890	302 49	794 36	4,364 03	150 89	5,651 38	7,386 33	18,649 48
Totals	$7,982 55	$2,560 27	$15,205 72	$1,234 03	$44,699 07	$66,081 23	$137,762 87

The Work of Five Years.

Having spent five full years in charge of this department, it may not be inappropriate in this report to indicate some of the

changes made and improvements adopted for the comfort of those committed to our care. Among these may be mentioned the erection of a building for the isolation of contagious diseases, containing four commodious rooms for patients, with bath-room, kitchen, and attendants' room, all well ventilated and properly furnished for such cases.

A brick boiler-house has been built and two new boilers of thirty-six horse-power each placed in position for the better heating of the Almshouse and adjacent buildings.

A substantial brick building two stories high has been erected, used for the purposes of a sitting room for the men, store-room, carpenters' shop and chair-shop ; also a one-story laundry thirty-five by seventeen feet has been erected near the Almshouse, thus removing all laundry operations from the basement story of the main building. The entire cost of this building and also a considerable portion of the expense of the hospital cottage was defrayed from the regular Almshouse appropriations.

Our large stable has been thoroughly repaired, shingled and repainted; the basement story of the Almshouse has been materially changed, affording bathing facilities for our boys equal to any in the state, while a convenient and pleasant bath-room has been added for the use of the women. A bath-tub has been set in the men's hospital, a great comfort and convenience.

Employments and Employés.

Our industry of chair-seating, established four years ago, has proved a decided success, chiefly of course, in the inculcation of habits of industry and in the prevention of much of that mischief which is still found "for idle hands to do."

Mr. Fred. N. Vose, the Assistant Superintendent, by his experience and equable disposition, is well fitted for the care and management of the truant boys, and the increased revenue from the chair shop attests his fidelity in the management of that industry.

Mr. William Maloney sells the house offal collected by our city teams, weighs the stone sold from the ledge, besides having the general care of our stables and stock. He is accurate in his accounts, and his great kindness to animals has been frequently remarked.

Mr. James Welch, our farmer, brings to the performance of his duties the advantages of long experience and an untiring industry. Our land is increasing in fertility, and our farm products increase in a corresponding ratio.

Mr. John Moynahan distributes the fuel and grocery supplies given to the poor of Cambridge as outside aid, and also markets our farm products, and by upright dealing has secured the good opinion of his customers as a faithful public servant. Mr. Carl Hagar, our efficient baker, and Mr. John Fitzgibbon, our faithful engineer, fill their positions most acceptably.

Miss Julia B. Knight, in the position of assistant matron and nurse, is well fitted for the discharge of her delicate and difficult duties.

Truant School.

The improvement in the truant school is very satisfactory. The introduction of a marking system some time ago has been followed by putting the boys upon a parole of honor so that they can be trusted to visit their friends, and go on errands, and enjoy more freedom in out-of-door sports. This plan has worked well, and the boys give a more hopeful promise of future usefulness than at any period since my acquaintance with the school.

Our teacher, Miss Alice H. Fawcett, is deeply interested in her work, and by the fertility of her resources arouses an interest in the work of the school room which produces the best results.

Health.

About four fifths of the adult sane persons received during the year have been hospital patients. The demand for more room and better facilities for the proper care of the sick is a pressing need. The children have enjoyed uninterrupted good health during the entire year.

Dr. Lewis L. Bryant has been prompt to respond to all demands, and has given the sick careful and kind treatment.

Conclusion.

In closing this report the superintendent desires to acknowledge the uniform kindness and valuable assistance received from

your Board, the faithful and discreet services of the chaplain and organist, the fidelity of all employés and the generous sympathy and encouragement of a kind-hearted community, ever solicitous that the poor and unfortunate shall be kindly cared for.

Respectfully submitted,

MARTIN L. ELDRIDGE,
Superintendent.

REPORT

OF THE

ASSISTANT CITY PHYSICIAN.

CAMBRIDGEPORT, Dec. 1, 1890.

To the Overseers of the Poor:—

GENTLEMEN: I have the honor to present the following report of the doings of this office for the year ending Nov. 30, 1890:

Almshouse.

Number of visits to Almshouse	168
Number of persons treated therein—men, 28; women, 27; boys, 33; girls 11	99
Number of professional visits made to same	1769
Number of chronic insane recommitted to insane asylums	2
Number of patients in the hospital wards Nov. 30	12
Cost of medicines and surgical appliances	$169 50
Number of deaths occurring therein	12

Outside Aid.

Number of persons receiving professional service	726
Number of paupers attended—men, 147; women, 230; boys, 111; girls, 126	614
Number of professional visits made to same	1564
Number of persons attended at the police stations	37
Number of civil service examinations for the police force	36
Number of examinations for the fire department	8
Number of soldiers' aid cases	19
Number of professional visits to same	60
Number of persons examined relative to their sanity	59
Number of certificates of insanity issued—men, 34; women, 16	50
Number of women attended in childbirth	18
Deaths	20
Total number of certificates of death issued	81
Cost of medicines and surgical appliances	$194 42

Total number of persons receiving professional service . .	825
Total number of visits made to same	3,486
Total number of deaths	32
Total amt. expended for medicines and surgical appliances	$363 92

For some years such cases as required surgical treatment, or better care than the facilities of the Almshouse afford, have been sent to the Carney Hospital in South Boston, a distance of about five miles. In some instances where the discomfort or danger of such a long journey has been considered too great, the patient has been sent to the Cambridge Hospital.

There seems to be no reason, aside from the difference in the rates charged, why all of our surgical cases should not be cared for within our own city.

Cambridge has a hospital that she may well be proud of; one that in its hygienic arrangements serves as a model in the construction of others.

Even though the expense of caring for such patients as the pauper department sends to such an institution be somewhat greater than at a hospital of longer standing and of larger pecuniary endowment, the fact that the city would thereby recognize and aid one of *its own* public institutions, erected *at home* for the benefit of the sick and injured of all classes, and conducted by a corps of our ablest medical men, who freely give their time and professional services to all beneath its roof, leads me to suggest the eminent propriety of endeavoring to make some arrangements satisfactory to both parties, at once encouraging to the officers of the Cambridge Hospital, and of particular benefit to all who may need its shelter and care.

I would most respectfully call your attention to what was said in the last report of this office respecting the need of better hospital accommodations at the Almshouse, and the employment of a visiting nurse for the outside sick.

Table of Deaths.

ALMSHOUSE.	Dec., 1889...	January, 1890	February...	March...	April	May.	June..	July.....	August	September..	October.	November...	Males.....	Females.....	Total .....
Apoplexy	..	..	..	..	1	..	..	..	1	..	..	..	1	1	2
Consumption	..	..	1	..	..	..	..	..	1	..	..	..	..	2	2
Cancer	..	..	..	..	..	1	..	..	..	..	..	..	1	..	1
Heart Disease	..	..	..	2	..	..	..	..	..	..	..	..	..	2	2
Pulmonary Congestion	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Senile Debility	1	..	1	..	..	..	..	..	..	..	..	1	2	1	3
Typhoid Fever	..	..	..	..	..	..	..	..	..	1	..	.	1	..	1
OUTSIDE.															
Apoplexy	1	..	..	..	1	..	..	..	..	..	..	..	1	1	2
Abdominal Tumor	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1
Consumption	3	..	..	..	..	2	..	..	1	..	1	1	3	5	8
Convulsions	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1
Infantile Debility	..	..	2	..	..	..	..	..	..	1	2	1	2	4	6
Tubercular Meningitis	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1
Nephritis	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1
Total	6	0	4	2	2	3	0	1	4	3	4	3	14	18	32

Respectfully submitted,

LEWIS L. BRYANT,

Assistant City Physician.

CITY CLERK'S ACCOUNT OF FEES AND LICENSES.

CAMBRIDGE, Dec. 1, 1890.

To the Honorable the City Council :—

THE undersigned herewith presents an account of the sums received for fees and licenses during the year ending November 30, 1890.

Auctioneers' Licenses	$38 00
Pool and Billiard Table Licenses	46 00
Wagons and Carriages	206 99
Intelligence Offices	22 00
Junk Licenses: Stores and Collectors	358 00
Pawnbrokers	6 00
Recording Mortgages, Assignments, etc.	511 07
Marriage Certificates	363 50
Certified Copies from the Records	24 25
Dog Licenses	424 40
Liquor Licenses	41 00
Fireworks	75 00
Minors' Licenses for the Sale of Newspapers, etc.	59 00
Sundries	4 90
	$2,180 11

All of which has been paid into the City Treasury.

The receipts from dog licenses have been $5,068.00. Of this amount, the Clerk's fee (20 cents for each license issued), amounting to $424.40, is included in the above list of fees, and the balance, amounting to $4,643.60, has been paid to the County Treasurer.

Respectfully submitted,

WALTER W. PIKE,

City Clerk.

CITY TREASURER'S FEES.

FOR THE YEAR ENDING NOV. 30, 1890.

CAMBRIDGE, Dec. 19, 1890.

To the Honorable the City Council :—

THE official fees received by me during the year ending Nov. 30, 1890, have amounted to seven hundred thirty-one and $\frac{90}{100}$ dollars, and are in detail as below:—

Making Affidavits	$53 00
Advertisements	69 59
Making Deeds	53 00
Posting Notices of Sale	81 50
Poundage	5 51
Preparing advertisements	141 50
Summonses	327 80
	$731 90

Very respectfully,

WM. W. DALLINGER,

City Treasurer.

REPORT

OF THE

CITY MESSENGER.

CAMBRIDGE, Dec. 15, 1890.

To the Honorable the City Council of the City of Cambridge :—

GENTLEMEN: In compliance with Section 3, Chapter 23, of Revised Ordinances relating to the purchase and delivery of stationery, the undersigned now presents his annual report of the amount purchased during the year, with a statement of the deliveries made (as per requisitions on file) to the various departments; and the amount of stock on hand at the close of the year ending Nov. 30, 1890.

Stock of Stationery on hand December 1, 1889	$288 24
Purchased during the year	1,714 91
	$2,003 15

Delivered to heads of departments as follows:

Street Department	$41 06
City Clerk	157 98
Engineering	27 13
Clerk of Committees	155 24
Auditor	81 38
City Messenger	168 92
City Solicitor	46 65
City Treasurer	742 94
Police Department	38 89
Lamp Department	3 75
Assessor's Department	232 62
Fire Department	5 13
Milk Inspector	13 00
Bridge Commissioner	2 42
Probation Officer	3 47
Superintendent of Public Buildings	23 73
Soldiers' Aid Agent	7 35
Inspector of Wires	10 15
Stock of Stationery on hand	241 34
	$2,003 15

Respectfully submitted,

FRANCIS L. PRATT,

City Messenger.

REPORT

OF THE

TRUSTEES OF THE PUBLIC LIBRARY.

To the City Council of Cambridge: —

The Trustees of the Cambridge Public Library have the honor to submit their annual report for the year 1890; this being the thirty-third since the Library was assumed by the city in its original form (as the Dana Library), and the second since the removal of the institution into a building of its own, under circumstances of enlargement which constituted practically a new departure. The plans involved in this expansion from a small institution into a large one were fully explained in the last annual report, and need not now be given in detail. It is sufficient to say that they have all worked well, and their results are fully stated by the Librarian in her ample report. It may be well, however, to carry back her comparison a step farther, and place side by side the statistics of the last *unbroken* year at the former rooms (1888) and the first *unbroken* year at the new building (1890) — the result being as follows: —

	1888.	1890.
Books given	7	3,430
" purchased	1,073	3,842
" total added	1,088	7,347
" taken out	86,221	104,527
" in library	20,440	29,745

No one knows better than those who have the actual care of a library the subordinate value of mere statistics, and how essential it is to consider the quality as well as quantity of its use. It is the constant effort of our Librarians to improve, as well as to gratify, the reading taste of the community; and it is found that this can best be done by watching the demand for books of

real value and meeting it promptly. The desire to read such books as Stanley's "In Darkest Africa" and Booth's "In Darkest London" is as marked and eager as the appetite for the newest novel, and it must therefore be gratified. Even such books as Sir Walter Scott's "Diary" and our townsman Professor James's "Psychology" have been so immediately in demand that duplicate copies became necessary. Stated roughly, the proportion of fiction taken from the Library is something less than half the circulation (46 per cent.), that of juvenile literature about a quarter (26 per cent.), and that of the remaining departments rather more than a quarter (28 per cent.) Doubtless this showing might be improved, but it is not essentially bad, and does not compare unfavorably with the returns of other libraries. The large proportion of fiction by no means indicates an equally large proportion of novel-readers, for the obvious reason that people read novels far more rapidly than any other books. Many a boy reads a new story, perhaps a very short one, every evening — and would read two a day if he could get them — while his father or mother spends a week or more in reading Stanley; yet their book counts but one in the statistics for that week, while his books count six. Again, so much of the knowledge of history and of foreign countries is now to be sought in works of fiction, that teachers themselves have constantly to prescribe it. The very first thing demanded in connection with our school deliveries was the purchase of several sets of the "Bodley Books" and "Zig-Zag Journeys," all giving under the guise of fiction a more graphic description of foreign countries than can otherwise be found. While, therefore, it must be the constant policy of librarians and trustees to guard against an undue proportion of fiction, it must by no means be regarded as discreditable to a library like ours to show a liberal share of such readings. When we consider that we have this year circulated 28,278 volumes which are neither fiction nor "juveniles," it is plain that the so-called "solid" work of the Library of itself makes a very respectable showing.

The purchases of books have been conducted on the lines indicated in a special report which was printed last year and can still be obtained at the Library. Every month the purchasing committee, with the Librarian, inspect the new books of the preceding month, which have been reserved for them at the book-

sellers', while books particularly asked for by readers are obtained more promptly. The purchases of older books are made by means of book catalogues and auctions or by direct importation. An important guide for purchases is found in the "Suggestion Book," where our readers are always urged to write down the titles of books needed. Thus far, we have rarely failed to obtain books thus recommended. Our purchases are of course mainly in English; but we have bought sparingly in French and German, especially in the direction of technical books and works of reference. We have also made a small purchase of current Swedish literature, hoping to reach that valuable and increasing portion of our population. It has not been considered necessary to purchase any books in the ancient languages, as reliance has been placed on the expectation — now fulfilled — that our needs in this respect would be filled by private donation.

Our income for the purchase of books from invested funds is now as follows: —

Fay legacy [income payable Feb. 1 and Aug. 1]	$40 00
Cummings legacy [income payable Jan. 1 and July 1]	80 00
Citizens' subscription fund [income payable May 1 and Nov. 1] . . .	200 00
	$320 00

These accounts are kept separate, and books purchased with the income of each are inscribed with the source whence they came. Special notice should be made of three donations or bequests of books received within the year. (1) The unusually fine and complete set of "Notes and Queries" received from E. S. Dixwell, Esq. — 86 volumes, including the six indexes which are now difficult to obtain — gives us a book indispensable for every good reference library, as there are multitudes of matters there treated which can be found nowhere else. (2) We are indebted to Denman W. Ross, Esq., for 419 volumes, nearly half of which consisted in a peculiarly valuable collection made by himself, of books on Early Institutions, a subject on which he himself had written an important monograph. The fine copy of "Domesday Book" is only one of the rare and valuable works which this Library can now offer to students of this important theme. (3) The bequest of Mrs. Möring, by far the largest ever received by the Library, has some features of especial interest. Including duplicates, it amounts in

all to 2,279 volumes, which are described in more detail in our Librarian's report. It contains the working library of an eminent clerical scholar, Dr. Charles Beck, one of the German republicans who came to this country in 1824, and a man who, like others of that class (Dr. Lieber, Dr. Follen and the two Drs. Wesselhoeft), threw himself with energy into the life of his adopted country. He was at first a teacher at the famous Round Hill School, established by George Bancroft at Northampton, but was professor of Latin in Harvard College from 1832 to 1850, and after his retirement was well known as a public-spirited and valuable citizen of Cambridge. He was for two years a representative in the legislature, and on the breaking out of the Civil War offered himself at the age of 63 as a recruit, and was much disappointed at being rejected. After this he devoted himself to the interests of the soldiers, with such efficiency that one local post of the Grand Army of the Republic bears his name. His library was apparently an object of attention to him up to his death in 1866, and was farther enlarged by his only daughter, Mrs. Möring, whose husband, like her father, was a German, and who took an especial interest in foreign literature. As a result we have a collection of great value to us, and one strongest where we were weakest; in classical and European literature; and it is accompanied by a large collection of works of art, including many boxes of casts of ancient gems of peculiar beauty and value. Several hundred volumes of duplicate books have been transferred, by the consent of the executor of Mrs. Möring's estate, to the libraries of the "Harvard Annex," the Harvard "Foxcroft Club" and the Cambridge Hospital. It is proper to express our thanks to James C. Davis, Esq., the executor just mentioned, for the friendly and liberal manner in which he has carried out this welcome bequest, not merely in its letter, but in its spirit. It is proper also to call attention to the many smaller donations of books during the year, even the smallest of which have sometimes filled gaps which the larger gifts had left unfilled.

The personal staff of the Library has remained unchanged, except that two new assistants have been appointed — Miss Rose Foley and Miss Grace Reed. The admirable building has proved in all respects satisfactory except that the increased scale of our operations will soon render necessary an enlarged reading-room

and an additional work-room for the Librarians, who have been absolutely compelled during this year to occupy the Cambridge Memorial Rooms. There has been unexpected delay in printing the new catalogue, which is now, however, going through the press, and will be ready by the time this report reaches our citizens. The use of our reading-rooms is all that can be desired in most respects; and the Trustees have made an arrangement with Mr. A. K. Sweet of the Cambridge Manual Training School to be at the Library on every Thursday evening, from 7 to 9 P. M., to give advice and suggestions to young mechanics and technical students in regard to the use of books bearing on their pursuits. The experiment is an important one, as this is a class of readers which has been very successfully reached elsewhere — notably in the Worcester library — and one for whose needs we have taken especial pains to provide.

The usual report from the City Auditor will accompany this report, and that of the Librarian will be found appended.

HENRY H. GILMORE,
OLIVER H. DURRELL,
T. W. HIGGINSON,
ALBERT M. BARNES,
ALVIN F. SORTWELL,
JOHN H. H. McNAMEE,
EDWARD A. BINGHAM,
SAMUEL L. MONTAGUE,
CHARLES WALKER,

Trustees of the Cambridge Public Library.

CAMBRIDGE, Dec. 29, 1890.

REPORT

OF

THE LIBRARIAN.

To the Trustees of the Cambridge Public Library :—

GENTLEMEN: In submitting this, her seventeenth annual report, the Librarian can assure you that the library has never known a year of greater prosperity. It has been steadily growing in popular favor, and has come to be recognized as one of the most important of our municipal institutions.

The circulation of books directly from the library and throngh the local stations has constantly increased. There are now six local stations, one near Mount Auburn and one in Ward IV. having been established during this year. The Librarian would suggest that the question of a branch library (or at least an office for the receiving and delivery of books) at Cambridgeport be considered. The amount paid to the four agents might pay the rent of a room, and one of the assistants now employed in the library might have charge of all the work for that locality. If this delivery office were located not far from the corner of Main and Norfolk Streets, the citizens of Wards II. and IV. would be as well accommodated as before the removal of the library, and in time a branch library might be built up for that part of the city. We are accumulating from various sources a large number of valuable duplicates which would form the nucleus of such a library.

The rapid growth of the library during the past year will be seen by the statistics given with this report. The purchases made from the Citizens' Subscription Fund, together with the large donations of this year, have more than quadrupled the usual number of additions.

The supplement to the catalogue of 1887 is now in press and will contain the accessions of the last three years, that is, entries

for about ten thousand books. As the public needs the list of English books at once it is desirable that the lists of foreign books and the Cambridge Memorial library appear in a separate pamphlet, the printing of which can be delayed till the English supplement is ready for use. Although most readers prefer a printed catalogue, it may be a question whether we can afford to continue the plan of printing supplements. A card catalogue of future additions, excluding works of fiction and juvenile books, might answer our needs. Printed lists of fiction and children's books would always be more satisfactory and need not be expensive.

The circulation of books to the schools is growing to be an important part of the library's work. Many expressions of appreciation and gratitude have been received from the teachers of various grades, telling how much assistance the books have given, both in methods of instruction and in discipline. The privilege of reading the library books being often made a reward of merit, the pupils are led to read higher literature than they would themselves have chosen. The amount expended in duplicating the best books for children has shown a good return, and we are thus inspired to keep the wants of the schools in mind in all our future purchases. Though the school use brings more wear and tear on the books, it is legitimate wear and not to be regretted when we consider the results.

The Reference Library has received many useful additions; among them are lexicons of the Swedish, Italian, German, French, Spanish, Greek and English languages. The International Encyclopædia, the Encyclopædia of American Literature and another of American biography have also greatly enriched this department.

Three very valuable donations have been received during this year. The first was from Denman W. Ross, of Cambridge, who presented nearly five hundred volumes, chiefly on historical subjects. Among these were four volumes containing the celebrated Domesday Books of England, first printed in 1783, a rare and valuable gift.

From Epes S. Dixwell, of Cambridge, we have received a set of Notes and Queries (86 volumes) with indexes complete to date (six in all). This is an important addition to the reference department, and was imported for us at no small expense.

From the estate of the late Mrs. Anna L. Möring we have received a large collection of paintings and engravings, most of which now adorn the walls of our public rooms. These are copies of the works of celebrated masters of painting; a list of them with a few explanatory notes may be found in Appendix A of this report. From the same source we have received 2,279* volumes, most of which have been already catalogued. Classified by the language in which they are written they are as follows: English, 733 (371 being duplicates of books already in the library); German, 701; Latin, 553 (29 duplicates); Greek, 248; Italian, 16; French, 19; Sanscrit, 9, This is by far the largest donation the library has ever received.

To the department of foreign books large additions have been made both by gift and by purchase. From Mr. Adolph Vogl we have received thirty-six standard works in German; the works of Daudet and other French authors have been imported, including important works on chemistry; a few books in Swedish have recently been purchased, by way of experiment.

The Memorial rooms are fast filling with books and souvenirs of the history of Cambridge. The collection of works by local authors contains the complete works of Longfellow, Lowell, Holmes, Higginson, McKenzie, Rolfe, Bradbury and four volumes by Thomas Shepard, pastor of the first church in our city. The incomplete sets by other authors we hope in time to complete. From the trustees of the Cambridge Hospital we have received several souvenirs of the late Dr. Popkin and his time. Among these is a water-color sketch of Harvard College, painted by Jonathan Fisher, in 1795, a picture of Harvard Square in 1820, also a bird's-eye view of Cambridge taken in 1857 or 1858. The three-cornered hat, blue silk umbrella, old arm-chair, and case of manuscript sermons by the reverend professor of Greek in Harvard College from 1815 to 1833 are interesting relics of the early years of this century. Though the original design of the Memorial Rooms was the preservation of souvenirs of Cambridge alone, there seems little doubt that we shall in time find ourselves collecting an art and historical museum, general in character, which will call for a room suitable for its display. The cases of fac-similes of foreign coins, seals and gems, speci-

*190 of these have since been given to the Harvard Annex and the Cambridge Hospital.

mens of old china, portfolios of photographs and engravings, etc., which we have recently received, afford much pleasure to our numerous visitors, but they cannot be shown to advantage in the Cambridge rooms.

The Reading Rooms are often filled with quiet readers and the privilege of free access to the Reference Library is more and more appreciated. The children are fast wearing out the bound volumes of *St. Nicholas* and *Wide Awake* set apart for them, and it might be well to fill a section of shelves with other good reading adapted to their use, to which they should have free access. A set of "Zigzag Journeys," short biographies of noted Americans, and some elementary books on science might thus open to them fields into which they would never find their way unaided.

The details of library work during the year are given in the statistics which follow:

Circulation.

First Quarter,	Central 23,909		Average per day,	332
" "	Local 5,779 29,688		" "	103
Second Quarter	Central 22,230		" "	291
" "	Local 6,071 28,301		" "	81
Third Quarter	Central 16,823		" "	223
" "	Local 3,993 20,816		" "	77
Fourth Quarter	Central 19,328		" "	248
" "	Local 6,394 25,722		" "	105
Total for year	. . . . 104,527		" "	366

1,118 books for reference have been taken from the library for use in the reading rooms.

Largest issue for any day, including local delivery, March 1	789
Smallest " " " " " " " October 24	190

The character of the circulation and the number of books sent to the different schools may be seen by the tables which follow. As the schools have in many cases quite a library of their own, the amount of supplementary reading done in connection with the schools should not be judged by this table alone. The school delivery occurs but once a week, to each high and grammar school, the use in the latter being thus far confined to the three higher grades. 428 books have been sent to the schools directly from the library; that is, not by the basket delivery.

Auditor's Statement of Expenses.

Salaries	$5,116 59
Books and Periodicals	2,646 92
Binding	854 56
New furniture and fixtures	138 70
Printing and stationery	416 22
Fuel	430 04
Gas	524 30
Electric lights	721 65
Delivering Books	585 25
Repairs	255 97
Sundry Items	185 67
	$11,875 87

Classified Circulation for the Year.—Local for Eleven Months.

	Fiction.	Juvenile Books	Biography.	Miscellany.	History.	Poetry.	Science and Art.	Travel.	Periodicals.	Foreign Languages.	Total for Year.
Central	38,739	21,515	4,025	4,069	3,568	1,295	5,003	2,650	1,051	375	82,290
Local*	9,017	5,168	1,139	696	1,377	236	983	1,508	349	54	20,527
Total	47,756	26,683	5,164	4,765	4,945	1,531	5,986	4,158	1,400	429	102,817
Per cent	.46	.26	.05	.05	.05	.01	.016	.06	.04	.01	.00 .004

*Including schools.

School Delivery from the Time it was Established, Nov. 11, 1889.

Name of School.	Agassiz—1 class 1 month	Allston.	Corlett—since March.	Harvard.	Peabody.	Putnam.	Shepard.	Thorndike	Washington.	Webster.	Wellington.	English High	Latin High.	Total.
Books delivered	10	780	94	546	533	256	536	582	789	761	586	265	181	6019

Less 329 reported in 1889, 5,690 for 1890.

Local Delivery for 1890.

Stations.	North Cam.	East Cam.	Cambridg'p't	Lower Port.	Belmont dist	Ward IV. since July.	Total.
Books	4084	3708	4177	2074	1739	765	16,547

Additions.

	Purchased.	Given.	Bound Periodicals.	Exchanged.	Totals.
First quarter	921	330	10	0	1,261
Second "	1690	878	14	6	2,588
Third "	551	144	16	5	716
Fourth "	680	2,078	24	0	2,782
Total,	3,842	3,430	64	11	7,347

Present number of the library, (estimated) 29,745

From the Citizens' Subscription Fund 2,260 volumes have been purchased during the year.

The income of the Fay legacy was spent for 126 volumes of *Blackwood's Magazine.*

List of Donors.

Abbott, Rev. Edward	1
Agassiz, Prof. Alexander	36
Allen, Rev. A. V. G.	1
American Oriental Society	5
Arlington Public Library	1
Arnold, George F.	14
Averill, Russell	1
Attwill, R. I.	17
Banks, Hon. Nathaniel	2
Bigelow, Alanson [unbound]	28
Billings, J. D.	2
Blodgett, Mrs.	6
Bolton, Charles K.	2
Bond, Miss	2
Boston Athenæum	5
Bradbury, Wm. F.	10
Brooks, Miss Carrie	3
Cambridge, City of	2
Chace, Mrs. M. E.	1
Cleveland Public Library	1
Cogswell, Dr. E. R.	15
Cooke, Mrs. H. R.	2
Crooke, George F.	3
Cushing, William	3
Cutler, Miss	17
Dixwell, Epes S.	86
Duroy, Charles W.	1
Forbes, Alice L.	1
Gilmore, Hon. H. H.	1
Gooodwin, Prof. W. W., [32 unbound]	37
Gould, Dr. B. A.	24
Greene, Mrs. J. S. C.	34
Harris, C. M.	3
Amount carried forward	367

Amount brought forward	367
Harvard University	1
Hayden, Hon. E. D.	8
Higginson, Miss Ann S.	63
Higginson, Col. T. W., [6 unbound]	92
Holland, Rev. F. W.	3
Horseford, Prof. E. N.	10
Hospital Book Committee	4
Houghton, Miss	2
Howe, Tracy	5
James, Prof. Wm.	2
Kendall, Mrs. P. M.	5
Leue, Adolph	1
Livermore, E. J.	14
Livermore, John	1
Longfellow, Miss [with several pamphlets]	10
Longfellow, Miss, and sisters	59
McKenzie, Rev. Alexander	6
McKnight, D. A.	1
Massachusetts, State of	11
Minneapolis Public Library	2
Möring, Mrs. Anna L. [including duplicates]	2,279
Murdock, Maria [unbound]	14
Museum of Comparative Zoölogy [18 unbound]	20
Muzzey, Rev. A. B.	31
Nickerson, S. D.	36
Norris, Dr. A. L.	2
Norton, Prof. C. E.	30
Orne, Caroline F.	8
Palfrey, Miss S. H.	2
Parker, Edmund M., collection of pamphlets by Joel Parker.	
Parsons, K.	1
Pope, F. L.	2
Porter, P. G.	9
Preble, Dr. Wallace	17
Reed, George B.	1
Rindge, Fred H.	3
Rolfe, Wm. J.	78
Ross, Denman W. [with 69 duplicates not added]	419
Sanborn, F. B. [7 unbound]	11
Sortwell, A. F.	2
Stapies, Fanny	17
Taber, C. A. M.	2
Thayer, W. R.	4
Titus, Mrs. C. H.	15
United States	31
Unknown	1
Vogl, Adolph	36
Ware, Miss [31 exchanged]	33
Winsor, Justin	1
Wyeth, Miss	42
	3,830

Other donations have been received, too late for entry in this report.

The entire library has been examined during the past month. Ten books are known to be lost; others which are missing we hope to recover.

Number of postal cards sent for books overdue	5,364
Number of new cards issued	3,530
Present number of card-holders	8,613
Number of books covered, labelled, etc.	18,854
Number of books bound or repaired	3,772

Amount Paid for Fines and Catalogues.

First quarter,	Fines,	$69 23				$69 23
Second quarter,	"	76 73				76 73
Third quarter,	"	65 70	Catalogues,	$8 75		74 45
Fourth quarter,	"	51 21	"	4 00		55 21
						$275 62

The City Treasurer's receipts for the above amounts have been submitted with the quarterly reports.

Respectfully submitted,

ALMIRA L. HAYWARD,

Librarian.

APPENDIX A.

List of Möring Gifts Other than Books.

1. "The Last Supper," by Leonardo da Vinci. [Engraving.] The original was painted on the wall of the former refectory of the Dominican convent attached to the church of Santa Maria delle Grazie in Milan.
2. A view of Athens. [Oil painting.]
3. The Nativity or Santa Notte by Correggio. [Oil painting.] The original is one of the gems of the Dresden Gallery. It was painted in 1527.
4. Falls of Tivoli. Water-color by R. Müller.
5. The Madonna of the Goldfinch by Raphael. [Oil painting.] The original is in the Uffizi Gallery, Florence.
6. The Bay of Naples. Water-color by R. Müller.
7. The Adoration of the Child. Correggio. [Oil painting.] Original in the Uffizi Gallery, Florence.
8. St. Cecilia. Raphael. Original in Bologna. [Engraving.]
9. Heidelberg. [Engraving.]
10. Virgin and Child. Francia. [Copy. Oil painting.]
11. The Aurora. Guido Reni. [Engraving.] The original is a fresco on the ceiling of the casino of the Rospigliosi Palace, Rome.
12. Virgin and Child. Murillo. [Oil painting.] Original in the Corsini Palace, Rome.
13. The Miracle of the Slave. Tintoretto. [Engraving.] Original in Academy, Venice.
14. Cumæan Sibyl. Domenichino. [Oil painting.] Original in Borghese Palace, Rome.
15. The Sistine Madonna. Raphael. Engraving. Original painted for the altar-piece of the cloister of San Sisto, Piacenza, Italy. Sold and moved to Dresden in 1753.
16. The Madonna of St. Francis. Correggio. [Engraving.] Original in the Dresden Gallery.
17. Magdalen. Battoni. [Oil painting.] Dresden Gallery.
18. Assumption of the Virgin. Titian. [Engraving.] Academy, Venice.
19. Marriage of the Virgin. Raphael. [Engraving.] Brera Gallery, Milan.
20. Rembrandt and his wife. Rembrandt. [Oil painting.] Dresden Gallery.
21. Abraham Sending Away Hagar. Van der Werff. [Oil Painting.] Dresden Gallery.
22. Column of St. Mark, Venice. [Original, oil painting.]

Two silver medals.

Eight small bronze medals.

Six portfolios of photographs, engravings and designs.

183 photographs of European views, personages, buildings, etc.

Ten lithograph portraits of German authors.

Two porcelain tiles.

Portrait bust of Mrs. Anna L. Möring.

APPENDIX B.

Authors Represented in Cambridge Memorial Library.

Abbott, Rev. Edward.
Agassiz, Louis *and* Alex.
Aldrich, T. B.
Allen, A. V. G.
Allston, Washington.
Bates, C. F.
Beck, Charles.
Billings, J. D.
Bond, G. P.
Bradbury, Wm. F.
Brooks, Mrs. S. W.
Clark, S. C.
Cranch, C. P.
Cushing, Wm.
Dana, R. H., *Sr. and 2d.*
Dix, W. G.
Eliot, C. W.
Emerson, R. W.
Everett, C. C.
Felton, C. C. *and* J. B.
Follen, Charles.
Francis, Converse.
Frisbie, Levi.
Fuller, Margaret.
Gilman, Arthur.
Gray, Asa.
Guyot, Arnold.
Harris, W. T.
Hayward, A. L.
Hedge, F. H.
Higginson, T. W. *and* M. T.
Hildreth, E.
Hill, Thomas.
Holmes, O. W.
Horsford, E. N.
Howells, W. D.
Longfellow, H. W.
Lowell, J. R. *and* R. T. S.
McKenzie, Alex.
Muzzey, A. B.
Newell, Wm.
Nichols, I.
Norton, Andrews *and* C. E.
Paige, L. R.
Palfrey, J. G. *and* S. H.
Parker, Joel.
Peabody, A. P. *and* Elizabeth.
Popkin, J. S.
Quincy, Josiah *and* J. P.
Orne, C. F.
Rolfe, W. J.
Shepard, Thomas.
Story, Joseph *and* W. W.
Thayer, J. B. *and* W. R.
Ware, Henry *Jr.*, *and* John.
Washburn, Emory.
Willard, Sidney.
Winsor, Justin.
Winthrop, John.

The collection now numbers 427, with a collection of pamphlets and the "Emerson Memorials."

REPORT

OF THE

JOINT STANDING COMMITTEE ON PUBLIC PROPERTY.

The annual report of the Committee on Public Property for the year 1890 is herewith submitted.

Although a large portion of the work formerly done by this Committee is now performed by the Superintendent of Public Buildings, the duties of the Committee are not less arduous than in former years, and are such as to require constant attention from each member. The Superintendent of Public Buildings has attended with a conscientious strictness to all the details of the various improvements and repairs required upon city property in charge of this Committee, and under control of other departments, and in his report has presented a full statement of what has been done under his direction, his estimates of the expenditures required in 1891 being thereto added.

Among the various improvements forwarded during the past year, the most important were the following: —

New Buildings.

Putnam School-house, Fourth Street: Building completed.
High School-house, Broadway: Work now going on.
Morse School-house, Allston Street: Work now going on.

Improvements and Repairs.

Felton School-house, Amory Street: Heat-regulating apparatus.
Gore School-house, Gore Street: New sanitary arrangements.
Otis School-house, Otis Street: General repairs.
Peabody School-house, Linnæan Street: Fire screens.
Thorndike School-house, Thorndike Street: General repairs.
Wyman School-house, Spruce Street: General repairs.

Following is a statement of the expenditures, under various heads of appropriations, approved by this Committee, to Dec. 1, 1890, and by the Committee of the year before, for the month of December, 1889. All repairs are made under the direct charge of the Superintendent of Public Buildings. Expenditures upon Engine-Houses and Police Stations, heretofore charged to Fire Department and Police, are now placed to the account of the appropriations for City Buildings, Care and Repairs. The cost of repairs upon the Public Bath-house and the Rifle Range are charged to the same account.

Expenditures.

HEADS OF APPROPRIATIONS.

PUBLIC PROPERTY. — City Buildings [care and repairs]: —		
City Hall [old building]	$3,434 14	
City Building, Brattle Sq.	3,205 88	
City Building, Central Sq.	2,818 77	
Engine House No. 1	28 91	
Engine House No. 2	128 18	
Engine House No. 3	46 30	
Engine House No. 4	152 37	
Engine House No. 5	84 42	
Hook and Ladder House No. 1	194 69	
Hook and Ladder House No. 2	75 51	
Chemical House No. 1	54 20	
Police Station No. 1	26 00	
Police Station No. 2	191 32	
Police Station No. 3	116 45	
Police Station No. 5	56 03	
Bath-house	344 60	
Miscellaneous	184 85	
		11,142 62
PUBLIC PROPERTY. — Incidental expenses: —		
Care of public clocks	176 91	
Horse-keeping [Superintendent of Public Buildings]	416 30	
Miscellaneous	1,037 31	
		1,630 52
PUBLIC PROPERTY. — New City Hall [furnishings]: —		
Furniture	2,617 00	
Desks	300 00	
Carpeting	242 81	
		3,159 81
Amount carried forward		$15,932 95

Amount brought forward		$15,932 95
PUBLIC PROPERTY. — New Engine House and land .		6,270 95
School-houses [care and repairs]: —		
Fuel	9,510 74	
Gas	636 30	
Janitors	13,712 65	
Repairs	7,006 53	
Supplies	4,684 27	
Extra labor	941 36	
		36,491 85
PUBLIC PROPERTY. — New High School-house . . .		94,345 35
New Putnam School-house . .		32,626 21
New Morse School-house . .		25,355 37
Incidental expenses, labor and services at elections		450 41
Total amount of payments of bills and other claims approved by this Committee in 1890		$211,473 09

This large expenditure may be accounted for by the fact that during the year the city was building three school-houses, one of which (the Putnam) was completed, and is now in use. A part of this expenditure, namely, the sum of $100,000, was provided for by a city debt payable in ten years at four per cent. interest.

The amount expended for care and repairs of school-houses varies but slightly from year to year. This year's outlay in that direction was in excess of that of 1889 by the sum of $402.53.

Inasmuch as the Superintendent of Public Buildings has fully covered the general subject of the various city buildings, reference may be made to his report for fuller particulars.

The following is the usual comparative statement of expenditures under the several heads of appropriations: —

City Buildings.

Under this head are included all buildings (except school-houses) the repairs upon which are made under the direction of the Committee on Public Property.

City Hall.

The amount expended for care and repair of this building was as follows: —

For Fuel	$328 20	
Gas and electric lighting	600 64	
Janitor	1,218 60	
Extra cleaning	568 15	
General repairs	105 75	
Furnishing and miscellaneous	612 80	
Total		$3,434 14
In 1890 the cost was		3,434 14
In 1889 the cost was		3,205 63
Increase		$228 51

The cost of maintaining this building has varied but slightly from year to year. The increase shown in the foregoing statement, over the outlay of the year 1889, is owing to the extensive repairs made upon all the City Hall furniture, anticipating its removal to the new building.

City Building (Brattle Square).

The cost of maintenance of the City Building, Brattle Square, in 1890, was as follows: —

For Fuel	$810 10	
Gas and electric lighting	708 59	
Janitor	1,248 00	
General repairs	317 30	
Miscellaneous furnishings	117 59	
Total		$3,205 88
The cost in 1889 was		3,613 94
The cost in 1890 was		3,205 88
Decrease in 1890		$408 06

This building is principally used for city purposes, the lower stories being devoted to the Police and Fire Departments. The Third District Court is held in the second story, and in the upper story is the armory of Company B, 5th Regiment, M. V. M. From these a rental is received as follows: —

Armory	$400 00
District Court	350 00

City Building (Central Square).

The cost of Central Square building in 1890 was as follows: —

For Fuel	$468 40	
Gas	430 80	
Janitor	1,198 60	
General repairs and furnishing	708 46	
Miscellaneous	12 51	
Total		$2,818 77
The cost in 1890 was		2,818 77
The cost in 1889 was		2,685 76
Increase in cost		$133 01

This building is chiefly devoted to city uses, part being occupied as an armory by Company B, 1st Regiment M. V. M. There is also a tenement in the second story over the Chemical Engine House, and occupied by the driver of the chemical engine. A rental is received from these uses as follows: —

Armory	$400 00
Tenement	100 00
Total	$500 00

Other City Buildings.

The expenditure in 1890 upon all other city buildings included in the classification hereinbefore made was	$1,683 83
The outlay in the same direction in 1889 was	2,541 86
Expended in 1890	1,683 83
Decrease	$858 03
The amount appropriated for care and repairs of city buildings was originally	$12,000 00
Subsequent decrease by transfer	254 73
Balance	$11,745 27
Amount expended	11,142 82
Balance unexpended	$602 65

School-Houses.

The appropriations for construction and care and repair of school-houses in 1890 was as follows: —

	Original Estimates.	As subsequently changed.
School-houses [care and repairs]	$39,000 00	$36,571 38
New High School	195,345 65	195,345 65
Putnam School	30,600 00	32,626 21
Morse School in Ward Four	55,000 00	74,900 00
	$319,945 65	$339,443 24

Of the school-houses mentioned in the foregoing list, the new High School is already in an advanced condition, the Putnam School-house is completed and occupied, while the Morse School-house will soon be covered and ready for slating. The sum of $55,000, originally appropriated for the Morse School-house, was found to be entirely inadequate, and the City Council authorized an additional appropriation of $19,900 therefor, as shown by the following list of proposals received in response to the call of this Committee.

Bids for the erection of school-house on Allston and Brookline streets : —

L. D. Willcutt	$84,450
B. F. Dewing	78,000
Couney & Wentworth	77,519
R. R. Meyers	76,140
John Quin	75,362
M. F. Tracy & Son	73,312
J. P. Stearns	71,271
George Chaplin	69,940
H. Coon & Co.	69,425
Donahoe Brothers	67,895

The contract for building this school-house was awarded to Donahoe Brothers of Medford, who were the lowest bidders.

The name of this school-house was adopted by the School Committee in honor of Hon. Asa P. Morse, who has been for many years, and still is, a valuable and efficient member of the School Board.

The amount appropriated for this school-house was	$74,900 00
Amount expended in 1890	25,355 37
Balance to be re-appropriated in 1891	49,544 63
Amount appropriated for the High School	195,345 65
Amount expended in 1890	94,345 35
Amount to be re-appropriated in 1891	$101,000 30

The Committee made the usual visits to all the school-houses in the month of January last, and a thorough inspection was made of the condition of the buildings, and especially of the sanitary arrangements connected therewith. All defects were noted, and as far as possible the same have been remedied.

The appropriation for school-houses [care and repairs] as made at the beginning of the year was	$39,000 00
Revenue received and added	87 90
	$39,087 90
Amount transferred to other appropriations	2,516 52
Net amount of appropriation	36,571 38
Amount expended	36,491 85
Balance unexpended	$79 53

For details of the expenditures under this head, reference may be had to the report of the Auditor of Accounts, and full details of work done upon the various city buildings and school-houses, with his estimates for the coming year, may be found in the report of the Superintendent of Public Buildings.

Following is the usual tabular statement of the cost of maintenance of each school-house. The item of gas consumed is included under the general head of furniture and supplies.

Maintenance of School-Houses.

Schools.	Fuel.	Repairs.	Supplies.	Ex. Labor.	Janitors.	Totals.
Allston	$277 20	$279 38	98 32	$61 82	$501 32	$1,218 04
Agassiz	302 40	97 15	29 28	.....	501 80	930 63
Boardman	252 00	296 85	22 67	16 00	224 92	812 44
Bridge	62 65	98 18	5 95	12 00	117 00	295 78
Corlett	85 60	107 33	.....	8 00	234 00	434 93
Cushing	120 10	138 01	3 00	8 00	234 00	503 11
Dana	100 80	47 70	6 27	16 00	224 92	395 69
Dunster	180 40	28 81	12 77	8 00	312 00	541 98
Felton	131 04	163 91	11 26	16 00	224 88	547 09
Gannett—new	201 60	23 86	57 05	.....	351 00	633 51
Gannett—old.	.....	.....	82	.....	277 00	277 82
Gore	403 20	180 06	75 99	17 75	468 60	1,145 60
Harvard	480 60	238 98	169 42	10 00	850 20	1,749 20
High	392 00	104 12	336 45	.....	850 20	1,682 77
Holmes	226 80	162 01	62 17	12 00	302 28	765 26
Lassell	151 20	501 59	8 81	18 00	312 00	991 60
Latin	237 30	77 11	31 69	.....	501 80	847 90
Lowell	256 50	89 65	9 82	2 75	253 48	612 20
Mason	90 72	40 98	5 61	8 00	224 88	370 19
Otis	226 80	215 58	64 15	40 00	268 68	815 21
Peabody	439 45	756 63	289 74	24 90	468 00	1,978 72
Putnam	932 12	34 87	261 55	77 29	468 60	1,774 43
Quincy.	157 20	19 70	.....	16 00	126 76	319 66
Reed	131 00	402 98	17 70	8 00	312 00	871 68
Riverside	151 20	107 08	19 60	12 00	312 00	601 88
Shepard	341 60	276 35	62 20	54 46	501 80	1,236 41
Sargent	75 60	219 39	26 72	34 10	200 44	556 25
Stearns	75 60	167 94	11 07	47 36	200 44	502 41
Tarbell	262 50	86 84	5 27	12 00	312 00	678 61
Thorndike	478 80	369 31	69 74	27 35	537 32	1,482 52
Washington	460 60	263 32	154 39	34 40	503 72	1,416 43
Webster	631 44	631 28	390 98	85 00	792 71	2,531 41
Wellington	504 00	151 42	137 79	8 00	377 00	1,178 21
Willard	316 40	152 75	79 71	.....	572 00	1,120 86
Wyman	271 04	270 73	35 87	8 00	400 40	986 04
All Schools	103 28	204 68	2,746 74	238 18	392 50	3,685 38
	$9,510 74	$7,006 53	$5,320 57	$941 36	$13,712 65	$36,491 85

Fire Department.

In addition to the care of the various city buildings, during the past year, this committee has had charge of certain expenditures for the Fire Department. A bell and hose tower was placed upon Engine House No. 2, the cost of which was charged to the appropriation for incidental expenses. A proposal for this work was received from John P. Stearns, who was the only bidder, and the contract was awarded to him for the sum of $1,390, being the amount of his bid. The sum authorized to be expended was $1,400.

Proposals were also received for building a brick engine house on River Street, as follows :—

McDonald & Son . . .	Hip roof	$13,928	. . .	Flat roof	$12,875
Donahoe Bros. . . .	"	13,775	. . .	"	13,275
R. R. Mayers	"	13,768	. . .	"	12,875
C. Chisholm	"	13,682	. . .	"	13,282
J. P. Stearns	"	13,499			
Kelly & McKinnon . .	"	13,114	. . .	"	13,014
John Quin	"	12,694	. . .	"	12,194

The committee decided upon the adoption of a hip roof and awarded the contract to John Quin of this city. The building is now in process of construction.

Other work upon engine houses has been carried forward by the committee, for more particular notice of which, reference may be had to the report of the Superintendent of Public Buildings.

City Lands and Surrendered Estates.

This committee has nominally had charge of this species of city property, although the matter of its sale has been in the hands of the Committee on Sale of City Lands, which committee consisted of the President of the Common Council and the members of the Committee on Public Property.

The lot on Cambridge Street between Marion and Harding Streets, known as the Rafferty lot, was sold to John A. Brogan, who has since erected a building thereon. The amount received from this sale was $2,250.

Other City Lands.

The territory known as the Upper Mill Pond Basin and the Tax-title lands remain as stated in the previous year's report. The area of these lands is given in another part of this report.

City Property.

As required by city ordinance, the following schedule is given of the real estate owned by the city. In cases where the property is in charge of departments and boards other than this committee, the name of such department or board is given. An appraisal has been made by the Assessors of the value of some of the buildings and lands, and in such cases the value so estimated is given.

Almshouse Estate.

Land and buildings situated on Tannery Street, Cambridge and in Somerville and Arlington, as follows: —

Land in Cambridge	$14\frac{242}{1000}$ Acres
Land in Somerville	$7\frac{954}{1000}$ Acres
Land in Arlington	$\frac{1}{10}$ Acres
Total	$22\frac{306}{1000}$ Acres

The land in Cambridge includes thereon the almshouse building, the new almshouse cottage for patients, the new brick school-house, and the old one-story building formerly used as a hospital. Some of the outbuildings, including a portion of the stable, are located upon the land in Somerville. There is also a stone ledge upon the Somerville land. A large portion of this land having heretofore been laid out in lots for sale, and placed in charge of a special committee appointed for the purpose, the area of these lots is not included in enumeration before given.

The original cost of the almshouse property was about $45,000, which sum includes the amount paid for the farm, and the subsequent outlay for the erection of a stone almshouse and other buildings thereon. The almshouse cottage for the reception of patients, which was erected in 1885 at a cost of $1,830, and the two-story brick school-house built in 1888 at a cost of $5,600, are not included in the sum named.

The Assessors have put a valuation of $36,000 upon this entire property. (In charge of Overseers of the Poor.)

Cemeteries

Cambridge Cemetery. The cemetery is situated on the east bank of the Charles River, and extends from the line of lands of the Coolidge estate and land of the Mount Auburn Cemetery Corporation to the Watertown line, the main entrance being on Coolidge Avenue, which forms its western boundary line. The total area of the cemetery lands is $65\frac{8679}{10000}$ acres. Included in this territory is the original portion containing $40\frac{8129}{10000}$ acres, and the additional purchase made in the year 1885, comprising an area of $25\frac{55}{1000}$ acres. Most of the land included in the cemetery was originally a part of the town of Watertown, and after its purchase for burial purposes was annexed to this city by Acts of the Legislature passed at different times.

The total cost to the city of these cemetery lands was about $92,000; but as they are not salable, no estimate has been made of their value.

Old Burial Ground. Garden Street, junction of North Avenue, containing 85,858 square feet of land. This land being dedicated to its present use, also has no salable value.

(The cemeteries are in charge of the Board of Commissioners of Cambridge Cemetery.)

City Buildings.

Cambridge Public Library, new stone building erected in 1888, upon land bounded by Broadway, Irving, Cambridge and Trowbridge Streets, and 135,666 square feet of land. The land was given to the city, and the library building, erected thereon by Mr. Frederick H. Rindge, the entire cost having been borne by him. (The City Council has placed this property under the exclusive control of the Trustees of the Cambridge Public Library.) Valuation of land, $29,900.

Brattle Square Building. Brattle Square, Ward One, and land 16,153 square feet. Valuation: Land, $9,700. Building, $60,000. Total, $69,700.

Central Square Building. Junction of Western Avenue and Green Streets, and 13,028 square feet of land. Valuation: Land, $10,500. Building, $50,000. Total, $60,500.

Old City Hall. Main Street, corner Pleasant Street, and 12,881 square feet of land. Valuation: Land, $19,300.00. Building, $10,000.00. Total, $29,300.00.

City Hall. Building erected on city land, bounded by Inman, Main, and Bigelow Streets. The land was purchased for this purpose by the city in the year 1888 and contains 48,464 square feet. Cost of the land, $93,524.67. The City Hall is the gift of Mr. F. H. Rindge, and was erected by him. Its cost is not known to the Committee on Public Property, and no appraisal has been made upon the building by the Assessors.

City Building. North avenue, near corner of Russell Street, comprising Engine House No. 4, Police Station 5, and the Ward Room for Ward 5, and land elsewhere mentioned in this schedule as being included in Engine House lot.

City Stables. Norfolk, Hampshire, and Tremont Streets, and 72,661 square feet of land. Valuation: Buildings, $16,000.00;

land, $30,000.00; total, $46,000.00. (In charge of Street Department.)

Old Police Station. Norfolk Street, on City Stable lot. Valuation of building, $1,000.00.

City Lands (Salable).

Lot on Portland Street, east side, north of Engine and Hook and Ladder House, containing 18,011 square feet. Valuation: $5,500.00.

Land on the south side of Broadway, West Somerville, formerly part of Cambridge Almshouse land, divided into lots according to city plan, dated April 10, 1884, as follows: —

On Endicott Avenue, so called, northwest side. Lots 60, 67, 76, 83, 92, 99, 108, 124	40,000 Feet
On Farragut Avenue, so called, southwest side. Lots 100, 107, 116, 123	20,000 Feet
On Farragut Avenue, northeast side. Lots 90, 101, 106, 117, 122	25,000 Feet
On Garrison Avenue, so called, southwest side. Lots 54, 57, 70, 73, 86, 89, 102, 105, 118, 121	50,000 Feet
On Garrison Avenue, northeast side. Lots 56, 71, 72, 87, 88, 103, 104, 119, 120	45,000 Feet
Total	180,000 Feet

These lands are included in the list of salable lands, as heretofore, but it has been deemed inexpedient to offer any further parcels thereof for sale, and offers to purchase have been declined.

These lots have heretofore been held at a valuation of four cents per foot, or $7,200.00 for the entire area.

Lot on Porter Street, near Jefferson Street, containing 3,578 feet. Valuation: $700.00.

City Lands (Reserved for Use).

Land on Norfolk Street, opposite City Stable yard, purchased in 1887, containing 39,600 square feet (in use by Street Department.) Valuation: $12,000.00.

Lot on Pilgrim Street, north side, containing an area of 23,700 feet, with buildings thereon belonging to the Sewer Department, the land being in use by that department. Valuation: Land, $5,900.00; buildings, $2,000.00; total, $7,900.00.

Lot on Auburn Street, south side, between Brookline and Sid-

ney Streets, with buildings thereon belonging to the Cambridge Water Works. This lot is used by the Water Works Department and has an area of 33,300 square feet. Valuation: Land, $6,600.00; buildings, $3,700; total, $10,300.00.

City Flats.

Flats, opposite City Wharf, Main Street, south side, opposite junction with Harvard Street; in all, 162,379 square feet. Valuation: $8,000.00.

Commons and Public Squares.

Cambridge Common. Garden Street, North Avenue, and Waterhouse Street. Area, 370,785 feet.

Public Square. Between Waterhouse Street and North Avenue. Area, 13,180$\frac{7}{10}$ feet.

Arsenal Square. Garden and Chauncey Streets and Concord Avenue. Area, 3,189 feet.

Public Square. Between Waterhouse Street and Garden Street. Area, 363 feet.

Public Square. Between Holmes Place and Cambridge Street. Area, 20,956 feet. This square is now in charge of the authorities of Harvard College.

Public Square. North Avenue, corner of Kirkland Street, on south corner. Area, 23,074 feet.

Public Square. North Avenue, corner of Kirkland Street, on north corner. Area, 33,357 feet.

Public Enclosure. Junction of Arrow and Main Streets. Area, 872 feet.

Broadway Park. Broadway, corner of Norfolk Street. Area, 107,181 feet.

Fort Washington. Waverly Street. Area, 42,123 feet.

Public Square. Junction of Pleasant and River Streets. Area, 1,569 feet.

Hastings Square. Brookline, Chestnut, and Henry Streets. Area, 29,999 feet.

Dana Square. Lake, Magazine, Lawrence, and Niagara Streets. Area, 33,531 feet.

Winthrop Square. Boylston, Winthrop, and Mount Auburn Street. Area, 10,236 feet.

As nearly all these commons and squares are restricted to the

uses to which they are dedicated, no valuation has been put upon the land.

Engine Houses.

House No. 1, Eliot Square, corner Mount Auburn Street, included with Ward 1 Building. Valuation included with that of the City Building, Brattle Square.

House No. 2, Main Street, near Winsor, and land, 3,150 feet. Valuation of land, $3,000; building, $5,000; total, $8,000.

House No. 3, Gore and Fourth Streets, and land, 4,220 feet. Valuation of land, $3,000; building, $12,000; total, $15,000.

House No. 4, North Avenue, near corner Russell Street, and land, 6,315 feet. Valuation of land, $3,000; building, $7,000; total, $10,000.

House No. 5, Hampshire Street, corner Inman, and land, 6,000 feet. Valuation of land, $3,000; building, $10,000; total, $13,000.

House No. 6, 60 River Street. near Pleasant, now being built, and which will be completed about April, 1891. Area of land about 4,994 square feet. Cost, $3,500.

House, Hook and Ladder No. 2 and Engine House, Portland Street, corner of Thorndike Street, extended, and 11,931 feet of land. Valuation of land, $3,000; building, $12,000.

Mill Pond Property.

Land on River Street, east of Putnam Avenue, formerly the upper basin of the Mill Pond, containing about 201,467 square feet. This land is laid out in lots, and a plan thereof has been put on record. The area given includes the streets shown upon said plan. Valuation, $30,000, or about 15 cents per square foot.

Land, formerly a creek, leading from River Street to Mill Pond, east of Putnam Avenue, containing 2,282 square feet. Valuation, $700.

School Houses and School House Lands.

Allston, Boardman Street, 15,193 feet of land. Valuation of land, $4,600; building, $18,000; total, $22,600.

Agassiz, Oxford Street, corner Sacramento Street, 19,689 feet

of land. Valuation of land, $6,000; building, $18,000; total, $24,000.

Boardman, Winsor Street, corner School Street, 10,018 feet of land. Valuation of land, $4,000; building, $12,500; total, $16,500.

Bridge, Pioneer Street, Lower Port, 4,646 feet of land. Valuation of land, $1,400; house, $500; total, $1,900.

Corlett, Holworthy Street, and 10,000 feet of land. Valuation of land, $600; building, $3,000; total, $3,600.

Cushing, Cushing Street, nearly opposite Locust Street, 14,788 feet of land. Valuation of land, $1,000; building, $3,000; total, $4,000.

Dana, Centre Street, and 14,317 feet of land. Valuation of land, $4,300; building, $2,000; total, $6,300.

Dunster, Concord Avenue, near Sparks Street, and 10,000 feet of land. Valuation of land, $2,000; building, $4,000; total, $6,000.

Felton, Amory Street, corner Summer Street, and 15,000 feet of land. Valuation of land, $4,500; building, $6,000; total, $10,500.

Gore, Gore Street, between Third and Fourth Streets, and 9,900 feet of land. Valuation of land, $4,000; building, $25,000; total, $29,000.

Gannett (old), Columbia Street, between Lincoln and Cambridge Streets, and 8,802$\frac{7}{10}$ feet of land. Valuation of land, $2,500; building, $2,000; total, $4,500.

Gannett (new), Jefferson Street, and 14,934 feet of land. Valuation of land, $3,000; building, $12,000; total, $15,000.

Harvard, Broadway, corner Inman Street, and 20,494 feet of land. Valuation of land, $12,000; building, $40,000; total, $52,000.

High School, Fayette Street, Antrim Street, and Broadway, and 37,828 feet of land. Valuation of land, $15,000; building, $40,000; total, $55,000.

Holmes, Hilliard Street, and 11,182 feet of land. Valuation of land, $4,500; building, $6,000; total, $10,500.

Lassell, Charles Street, near Sixth, and 10,000 feet of land. Valuation of land, $2,500; building, $8,000; total, $10,500.

Latin, Lee Street, near Harvard, and 10,000 feet of land. Valuation of land, $5,000; building, $10,000; total, $15,000.

Lowell, Lowell Street, near Mount Auburn Street, and 12,033 feet of land. Valuation of land, $2,000; building, $12,000; total, $14,000.

Mason, Front Street, corner Jennings Court, and 10,000 feet of land. Valuation of land, $8,000; building, $2,000; total, $10,000.

Otis, Otis Street, between Fifth and Sixth Street, and 8,270 feet of land. Valuation of land, $4,000; building, $12,000; total, $16,000.

Peabody, Linnæan Street, corner of Avon Street, and 21,813 square feet of land. Valuation of land, $5,400; house, $25,000; total, $30,400.

Putnam, Otis Street, corner Fourth Street, and 11,900 feet of land. Valuation of land, $8,300; house, $65,000; total, $73,300.

Quincy, Mason Street, corner James Street, and 8,469$\frac{3}{10}$ feet of land. Valuation of land, $4,200; house, $10,000; total, $14,200.

Reed, Reed Street, Ward 5, and 12,000 feet of land. Valuation of land, $1,000; building, $3,500; total, $4,500.

Riverside, Putnam Avenue, Ward 1, and 11,198 feet of land. Valuation of land, $2,800; building, $5,000; total, $7,800.

Sargent, Broadway, corner Winsor Street, and 9,995 feet of land. Valuation of land, $4,000; building, $3,000; total, $7,000.

Shepard, North Avenue, near Russell Street, and 14,755 feet of land. Valuation of land, $7,000; building, $20,000; total, $27,000.

Stearns, Harvard Street, near Prospect Street, and 10,050 feet of land. Valuation of land, $5,000; building, $3,000; total, $8,000.

Tarbell, Grigg, Howard, and Magee Streets, and 19,500 feet of land. Valuation of land, $4,000; building, $8,000; total, $12,000.

Thorndike, Thorndike Street, corner Sixth Street, and 10,027 feet of land. Valuation of land, $4,000; building, $30,000; total, $34,000.

Washington, Brattle Street, corner of Farwell Place, and 14,951$\frac{1}{2}$ feet of land. Valuation of land, $7,000; building, $30,000; total, $37,000.

Webster, Upton Street, and 25,839 feet of land. Valuation of land, $9,000; house, $50,000; total, $59,000.

Wellington, Columbia, corner of Lincoln Street, and 18,870 feet of land. Valuation of land, $5,700; building, $16,000; total, $21,700.

Willard, Lake, Lawrence, and Niagara Streets, and 20,079 feet of land. Valuation of land, $5,000; building $20,000; total, $25,000.

Wyman, Spruce Street, corner Groveland Street, and 14,346$\frac{8}{10}$ feet of land. Valuation of land, $2,400; building, $6,000; total, $8,400.

English High School-house Lot, on Broadway, Trowbridge, and Ellery Streets, containing about 73,350 square feet. (This lot is included among the recent donations of Mr. Frederick H. Rindge. The city is erecting a High School Building thereon.) Valuation of land not estimated. It is expected that this building will be completed during the summer of 1891.

Lot of land on Allston and Brookline Streets, purchased for the purpose of building a primary school-house thereon, containing about 25,650 square feet. Valuation, $7,000. The city is now building a three-story brick school-house on this lot.

Tax-Title Estates (Salable).

The following described estates were conveyed to the city by persons who had purchased them at auction sales by the collector of taxes, and the city has taken legal possession of the same.

Lot on Broadway, west corner of Sixth Street, containing 12,319 feet. Valuation, $5,000.

Lot on Second Street, east of Conlan's Court, containing 26,400 feet. Valuation, $1,300. The city has recently filled this lot.

Lot on Hunting Street, west side, adjoining land late of Melley, containing 2,709 feet. Valuation, $400.

Lot on Spruce Street, near railroad, adjoining land of McSweeney, containing 4,000 feet; no appraisal.

Land on Walden Street, southeast of land of Darling, southwest of land formerly of Saunders; area, 16,635 square feet. Valuation, $2,000.

Wharves and Landings.

Public Landing, foot of Bath Street; area unknown. *Gerry's Landing*, so called, south of Mount Auburn Street; area unknown. Each has a frontage of 30 feet on the river.

City Wharf, Main Street, opposite Harvard Street, 9,400 feet. Valuation, $7,000.

City Wharf, River Street, west of River Street Bridge, formerly a part of the Mill Pond basin, and which was filled by the city. Area, 90,784 square feet. This wharf has a frontage of about 100 feet on the river. Valuation, $23,000.00.

Water Works Property.

(These lands were acquired under the various legislative acts in relation to the water supply of the City of Cambridge.)

Kingsley Park, opposite Lexington Avenue, between the Fitchburg Railroad and Fresh Pond, including the old Engine House lot; containing 309,336 square feet.

Tudor Park, between Fresh Pond drive and Watertown Branch Railroad, containing 57,312 feet.

Lands Bordering on Fresh Pond, partly taken and partly acquired by purchase, viz:—

On Concord Avenue, south side, two houses and barn, and $27\frac{33}{100}$ acres of land; also land formerly of Michael Moran, $\frac{5}{8}$ acre.

On Woodlawn Avenne, east side, Lot 3; house and land late of Moore; area of land, 15,735 square feet.

On Grove Street, Town of Belmont, lot containing 272,800 square feet; part of Bright estate.

On Concord Avenue, south side, Lot 1, 99,000 square feet; also, two ice-houses and land, 112,200 square feet; both lots formerly the Black estate.

On Concord Avenue, south side, Lots 2 and 3, 219,400 square feet; also lot containing 24,100 square feet.

On Fresh Pond Lane, hotel, house, stable, sheds and boat-house, and $11\frac{1}{4}$ acres of land, formerly of the Congregation of the Sisters of St. Joseph.

On Fresh Pond Lane, rear, Lot 1, 364,000 square feet.

On Holworthy Street, Lot 2, 18,480 square feet.

On Woodlawn Avenue, Lot 4, 107,616 square feet.

On Woodlawn Avenue, Lot 6, 26,989 square feet.

On Woodlawn Avenue, Lot 7, 91,040 square feet.

On Cushing Street, west side, Lot 9, 22,348 square feet.

On Cushing Street, east side, Lot 8, 41,053 square feet.

On Woodlawn Avenue, Lot 5, 9,405 square feet.

On Woodlawn Avenue, lot containing 24,096 square feet.

On Cushing Street, east side, Lot 11, 227,750 square feet.
On Cushing Street, east side, house and land, 416,800 square feet. } Formerly Middlesex Institution for Savings.

Near Fresh Pond and Adams Place, two lots, containing 110,891 square feet.

Adams Street, one house.

Adams Street, lot containing 105,322 square feet.

Adams Street, one house and land, 55,275 square feet; formerly Gay estate.

Woodlawn Avenue, north side, two houses.
Woodlawn Avenue, north side, two stacks. } Formerly of Spencer Child, and land, 25,216 square feet.

Concord Avenue, south side, Old Gravel Pit, containing 397,417$\frac{7}{10}$ square feet.

Adams Street, house, stable, and land, 190,500 square feet, formerly of Gay estate.

Cushing Street, west side, lot, 91,112 square feet, near *Concord Avenue and Railroad*, six ice-houses, engine-house, house, shed and stable, six ice-houses, three ice-houses, formerly Boston Ice Company's property, and land, 4$\frac{1}{2}$ acres.

Near Fresh Pond, one house; *Adams Place*, one house, old, barn and shed, tool-house, two ice-houses, three ice-houses, engine-house and sheds, office and scales, ice-house (Black's), and 419,222 square feet of land, formerly Fresh Pond Ice Company's property.

Concord Avenue, near Adams Street (Francis Smith estate), house and 10,805 square feet of land.

Concord Avenue, corner of Adams street, house, and 32,425 square feet land (formerly of Joseph Smith).

Concord Avenue, house, stable, and 62,000 square feet of land.

Concord Avenue, rear Niles' slaughter house, Coolidge lot; area not ascertained.

Adams Street (Lyons property), 1$\frac{3}{4}$ acres land.

Concord Avenue, south side, house and stable and 294,000 square feet of land.

Lands Bordering on Little Pond. Area unknown.

Pumping Station, Worthington Street, opposite foot of Lexington Avenue, and 90,414 feet of land.

Reservoir, Reservoir Street, corner High Street, and 86,920 feet of land. All the Water Works property is in charge of the Cambridge Water Board.

Recapitulation of Areas.

Kind of property.	Square feet.	Acres.
Almshouse Lands, about	971,642.72	22.306
Cambridge Cemetery [original]	1,778,511.24	40.812
Cambridge Cemetery [enlargement]	1,091,395.8	25.055
Burial Ground, near Harvard Square	85,858	1.97
Occupied by City Buildings	298,853	
City Lands [salable]	201,589	
City Lands occupied by Sewer Department	23,700	
City Lands occupied by Water Works	33,300	
City Land occupied by Street Department	39,600	
City Flats	162,379	3.73
Commons and Public Squares	699,015.7	16.047
Occupied by Engine Houses	36,610	
Mill Pond Lands, about	203,749	
Occupied by School-houses	589,883.3	
Tax-Title Estates, four estates	61,763	
Water Works Lands at Fresh Pond [as far as determined]	6,407,144.7	147.088
Wharves and Landings, Main Street	101,784	
Total about	12,786,778.46	293.59

Schedule

Of the various salable lands enumerated in this report with their appraisal: —

Almshouse Lands [salable] in Somerville, 180,000 feet	$7,200 00
Land on Porter Street, 3,578 feet	700 00
Land on Portland Street, 18,011 feet	5,500 00
Flats opposite Wharf, Main Street, 162,379 feet	8,000 00
Land, corner of Broadway and Sixth Street, 12,319 feet	5,000 00
Land on Second Street, 26,400 feet	1,300 00
Land on Hunting Street, 2,709 feet	400 00
Land on Walden Street, 16,635 feet	2,000 00
	$30,100 00

The amount of salable property belonging to the City of Cambridge has been gradually reduced from year to year by sales. Some of the pieces of property enumerated in the preceding list are of greater value for use than for purposes of sale. It has been deemed advisable to withhold from sale the almshouse

lands and the Mill Pond property; the former being required for use, and the latter not being fully developed according to the city plan.

The following table gives the estimated valuation of such of the various parcels of city property hereinbefore classified, and having a salable value, as have been appraised by the Assessors. The figures represent the value of the property based upon former estimates and upon recent sales. A large amount of valuable property, such as commons and public squares, and other lands held for special uses that could not be sold without alienation of title, is necessarily omitted from this schedule, no appraisal having been made of this class of property.

The estimate of city property is necessarily incomplete, as it has been found impossible to get an appraisal of the value of new buildings, the work upon which is still going on. The water works lands have many of them been only recently acquired, and in some cases the cost has included damages. These being exclusively in charge of the Water Department they are properly to be regarded as a part of the Water Works plant, and their value will, by another year, be appraised and reported in the next annual report of that department.

The valuation of Public Buildings and School-houses is generally based upon cost, though in many instances the appraisal is made at lower figures.

Appraisal of Real Estate.

The following schedule comprises the aggregates of the valuations of such of the various parcels of city property as have been appraised by the Assessors:

Almshouse and Land	$36,000 00
Cambridge Cemetery [cost of land only]	92,400 00
Cambridge Public Library [land only]	29,900 00
City Buildings and Land [Brattle Square, Central Square, City Hall]	159,500 00
City Hall, new, [cost of land only]	94,000 00
City Stables and Land	58,000 00
City Lands [salable]	15,400 00
City Land on Pilgrim Street, and buildings [occupied by Sewer Department]	7,900 00
City Land on Auburn Street, and buildings [occupied by Water Department]	$ 10,300 00
Amount carried forward	$503,400 00

Amount brought forward	$503,400 00
City Wharf on River Street	23,000 00
City Wharf on Main Street	7,000 00
City Flats, Lower Port	8,000 00
Engine Houses and Land	41,500 00
Mill Pond Lands, Western Avenue	30,700 00
School Houses and Lands	703,700 00
Tax-Title Lands	8,700 00
	$1,326,000 00

In making up this final report at the completion of a busy year's work, this committee would have been glad to present a more complete statement of the kind and value of all real estate owned by the city, and in charge of the various departments. It is hoped that in the report of the next year, such a schedule may be included.

During the last three months the committee has found its duties so enlarged by the imminent prospect of removal to the new City Hall, that an almost daily attendance has been required of every member of the committee, to arrange the details for the proper furnishing of the building. The results of their efforts in this direction have been highly satisfactory. It is believed that all the furniture purchased for the several departments will be adjudged as in tasteful keeping with the various other appointments of this noble structure, which now rears its fair proportions in the midst of our beautiful city, to stand as an enduring memorial of the open-handed generosity of its giver. It is a pleasant thought that will abide in the memory of every member of this committee, that the labors of the year were crowned and completed with the furnishing and occupation of the new City Hall.

DANIEL E. FRASIER,
FRANK H. TEELE,
JOHN S. CLARY,
MARSHALL N. STEARNS,
SILAS E. BUCK,
} *Committee on Public Property.*

REPORT

OF THE

SUPERINTENDENT OF PUBLIC BUILDINGS.

OFFICE OF THE SUPERINTENDENT OF PUBLIC BUILDINGS,
CITY HALL, CAMBRIDGE, DEC. 1, 1890.

To the Honorable City Council :—

GENTLEMEN: In accordance with the City Building ordinance I have the honor to submit my fifth annual report regarding the construction, repairs and improvements which have been made on public buildings owned by the city and under the direction of the Committee on Public Property for the year ending November 30, 1890.

The amount of work accomplished on Schoolhouses and Public Buildings during the year has been unusually large.

Putnam Schoolhouse.

The Putnam Schoolhouse, located on Fourth street, Ward 3, has been completed and was first occupied for school purposes on the 9th day of September. It is of large dimensions, containing thirteen school rooms, with a seating capacity for six hundred and fifty pupils, with an exhibition hall, and is one of the best arranged buildings of its kind in the city. Every device of modern invention for convenience, health and comfort has been considered in its construction. The system of heating and ventilation is the "Smead System" and is considered, with the dry-closet arrangement, to be a perfect appliance, and will, without doubt, prove perfectly satisfactory. The contract price for this structure (not including the part erected in the year 1887, to which the present building is an addition) was $38,325.00, and has been paid in full. In addition to this amount there has been paid to the architect his full claim of $1,149.75, and for extra work by the contractor and his sub-contractor the sum of $392.28. The blackboard work cost

$225.00, the water supply $47.11, iron gates at the front entrance $70.00, making a total cost on the building of $40,209.14. The amount paid for the heating, ventilation and dry closets was $4,750.00, making a total cost of $44,959.14, thus coming within the amount of the appropriation, which was $45,000.00.

English High School.

The construction of the new English High Schoolhouse on Broadway is fairly advanced, but owing to the labor disturbances of the past summer the stone cutting was somewhat delayed and the progress of the work has therefore not been so rapid as it would otherwise have been. At the present time the wing roofs are boarded in and ready for slating. The brick work of the central pavilion is ready for the stone cornice, which is now being placed in position. With favorable weather the roofs will soon be finished; work on the furring and lathing will be prosecuted during the winter. The plumbing, gas fitting and iron staircases will be put in and the building made ready for plastering at the earliest practicable moment. It is expected that the work will be completed within the time specified in the contract—August 1, 1891. Much filling has been required on the lot, as it was originally very low. The city has been doing this work from time to time as material was available, and the filling is now nearly completed. The contract price of this structure is $170,067.00. Payments have been made to the contractor amounting in the aggregate to $90,140.64. There has also been paid to the architects on account the sum of $6,418.45, and to the clerk of works $1,044.00. The contract for the heating and ventilating system has been awarded, the price being $13,380.00. An additional contract has been made for mixed dampers at a cost of $700,00, making the entire cost $14,080.00.

New Morse Schoolhouse.

Work on the Morse Schoolhouse on Brookline street, corner of Allston street, Ward 4, has been pushed forward with commendable rapidity and is now ready for its roof. If the weather proves favorable it will soon be covered in and ready for slating. This structure is of large dimensions, three stories high, built of

brick, with freestone trimmings, and will contain fourteen school rooms, with a seating capacity of seven hundred pupils and an exhibition hall. When completed, as is anticipated in the ensuing summer, it will provide for the pressing necessities of that section of the city. The contract price is $67,895.00. Payments have been made to the contractor to the amount of $24,000.00 and $1,300.00 to the architect on account of plans. The contract for the heating, ventilating and dry closet system has been awarded to the Smead Warming and Ventilating Company, for the sum of $4,800.00.

Tablet for the Washington Schoolhouse.

Through the generosity of Mr. Philip Nutting, a gentleman over eighty years of age, and one of the public spirited citizens of our city, a tablet was presented, to be placed on the Washington schoolhouse in Ward 1. The tablet gives the date of the conception of the old "Faire Grammar School," which was erected on that spot in 1631; also the date of the building of the present schoolhouse, 1852. It was placed in position under the direction of the Superintendent of Public Buildings and the Committee on Public Property, and was acknowledged by the master and scholars with services appropriate to the occasion.

Repairs on Schoolhouses.

Repairs have been made during the year on nearly all of the schoolhouses, their condition has been greatly improved, and many necessities have been met. Requirements in the line of improvements are becoming more exacting year by year with the advance of modern thoughts and theories relating to school buildings; former systems are being abandoned, and it is thought necessary to substitute for them those of a later period, and the present demand is to modernize the old school-house and make it more attractive, healthy, comfortable and convenient.

There is no matter of more vital importance to our citizens at large than the proper care and condition of our schoolhouses, and the people will hold the proper authorities responsible to keep them in a healthy condition and with pleasant surroundings. There are abundant and pressing calls for sanitary improvements in many of our school buildings, such changes and necessities involving in many cases a large expenditure of

money, and the city should be fairly liberal in its appropriation therefor. It is frequently difficult, perhaps impossible, to so alter an old schoolhouse erected on a faulty plan, and when the ventilating features of public buildings were not appreciated or as fully understood as they now are, so as to make them satisfactory; but a new schoolhouse should be perfect in all its appointments. This is now the policy adopted by our city in its new departure, and much thought, study and close attention has been expended to bring our recently built schoolhouses up to the highest standard of excellency in these respects. This we believe is apparent and will be readily admitted by all interested in our work. The matters relating to the best system of ventilation and sanitary improvements for schoolhouses have been an important and continued inquiry, and it has been the constant and untiring aim of the Committee on Public Property to adopt the most perfect and effectual appliances therefor.

Gore Schoolhouse.

The Gore Schoolhouse on Gore street, Ward 3, has received much attention in its sanitary system, and a most perfect arrangement of dry closets has been introduced in its basement. This has entailed many changes and alterations throughout the building, and consequent expense. The contract was awarded to Messrs. Fuller & Warren for the sum of $2,650.00, not payable until after six months' satisfactory trial. When said payment becomes due an appropriation to the amount of $2,650.00 will be required.

Felton Schoolhouse.

A contract was awarded to Mr. F. W. Chester to set up in the basement of the Felton Schoolhouse on Amory street Ward 2, "Johnson's Electric Heat Regulating Apparatus" for the sum of $250.00, payment conditional on its perfect success after due trial. Necessities having since arisen, it is found that it will require an additional expenditure of $37.00, and therefore an appropriation of $287.00 will be necessary to meet the payment.

Otis, Thorndike and Wyman Schoolhouses.

The exterior woodwork of the Otis Schoolhouse has been painted at a cost of $73.00, the Thorndike for $119.00, and the

Wyman for $174.00. Needed repairs on all the blackboards in the schoolhouses have been made amounting to over ten thousand feet, at a cost of $550.00.

Peabody Schoolhouse.

A contract was awarded to Charles Trainor & Co. at a cost of $250.00 for three asbestos curtains, hung in the hallways, to be dropped in case of fire. The expense of incidental carpenter work and painting amounted to $166.25, making the whole cost $416.25. This expenditure was necessitated by the constant demands of the State Inspector, who claimed that the protection of the scholars in case of fire was not sufficient. Although the demands were not deemed necessary, the requirements were carried out by the direction of the Committee on Public Property. Granite curbing in front and on the side of the school house lot has been put in place at an expense of $375.00.

Mason Schoolhouse.

The old schoolhouse, which is a subject of much criticism, situated on Front street, near Main street, is in a dilapidated condition and not worth the cost required to put it in good order. It is the intention to abandon this worn out structure on the completion of the Morse school house. The location is in a central and commanding position on the highway leading to the new Harvard bridge, and will be more valuable in the future for business purposes than for its present use. In consideration of the short time it will be needed for school purposes, it is thought best to make repairs only to the extent of actual necessities for its temporary use.

Repairs.

The whole number of finished schoolhouses owned by the city is thirty-six, eighteen of these being built of brick and eighteen of wood. As in former years the most important repairs on our buildings have been in connection with the heating, ventilation, plumbing and proper drainage. Difficulties in these respects are often developed at unexpected times and places, and demand much watchful care and considerable expense. The repairs on roofs and chimneys have been quite an item; leaks have continually appeared, and hasty work has often been re-

quired to prevent additional damages by reason of stains on the plastering and tinting. Several schoolhouses have been painted on the exterior and many fences rebuilt and painted. The blackboard work has required an unusual amount of attention, a contract to repair over ten thousand feet having just been completed. A large number of basements have been whitewashed and walls and ceilings whitened and tinted; yet with all the numerous expenditures there are still constant calls for additional care and repairs. It appears necessary that the city should be generous in its appropriations for this purpose, in order that our school-houses may be attractive and creditable to our city.

The National Flag.

Flag-staffs have been erected and flags provided for the following schoolhouses: Allston, Harvard, Putnam, Peabody Sargent, Stearns, Shepard, Thorndike, Washington, Webster, Agassiz and Wellington. These flags were presented to the schools designated by the liberality of friends, and in some cases the staff was also included. The expense to the city in the furnishing and erection of staffs, preparation of the buildings to receive the same, painting, repairs, etc., has been $697.37. As these flag-staffs will frequently require paint for preservation, and the flags and halyards will be subject to constant wear and often need to be replaced, an amount of $100.00 is respectfully recommended as an appropriation for this purpose.

The annexed tables will show the amount expended for repairs, alterations, etc., on each building belonging to the city:—

High School	$104 12
Latin School	77 11
Allston Grammar	279 38
Corlett Grammar	107 33
Harvard Grammar	238 98
Putnam Grammar	34 87
Shepard Grammar	276 35
Thorndike Grammar	369 31
Washington Grammar	263 32
Webster Grammar	631 28
Wellington Grammar	151 42
Agassiz Primary	97 15
Amount carried forward	$2,630 62

Amount brought forward	$2,630 62
Boardman Primary	296 85
Bridge Primary	98 18
Cushing Primary	138 01
Dana Primary	47 70
Dunster Primary	28 81
Felton Primary	163 91
Gannett Primary	23 86
Gore Primary	180 06
Holmes Primary	162 01
Lassell Primary	501 59
Lowell Primary	89 65
Mason Primary	40 98
Otis Primary	215 58
Quincy Primary	19 70
Reed Primary	402 98
Riverside Primary	107 08
Sargent Primary	219 39
Stearns Primary	167 94
Tarbell Primary	86 84
Willard Primary	152 75
Wyman Primary	270 73
Peabody Grammar	756 63
All schools	204 68
	$7,006 53

Military Department.

The shooting station building, with rifle bits and targets, nearly destroyed by fire on the night of July 3d, have been rebuilt with additional improvements in the line of convenience and security, at a cost of $674.40. The lack of proper ventilation in the upper story of the Central Square city building used for an armony has been attended to and the work completed at a cost of $275.00.

Bath House.

The expense on the Bath House for the year amounts to $100.40.

Sewer Department.

The alteration of a wooden building situated on a lot of land within the premises of the Sewer Department yard on Pilgrim street is now being transformed into a dwelling house at an expense to be met by that department.

Fire Department.

A bell and hose tower has been erected on Engine House No. 2, Main street, from plans prepared by the City Engineer. The

contract price for the work was $1,390, which has been paid in full. A new engine house located on River street is now in course of construction. The contract price was $12,694.00, and the first payment of $2,500.00 on account has been made to the contractor, leaving $10,194.00 of the appropriation for future payments when due. A contract for a steam heating apparatus, etc., has been made at a cost of $700.00 ; a payment of $200.00 has been made to the architect for plans, and a bill for water supply amounting to $23.95 has been paid. Extensive alterations and improvements have been made in the reconstruction of the stalls in the stable of the Hook and Ladder Company in the city building in Brattle Square. The radical changes will tend to preserve that part of the building from decay and eradicate the bad odor which previously existed. The cost was $265.78.

The miscellaneous repairs on the several engine houses have been as follows:—

Engine House No. 1, Brattle Square	$25 91
Engine House No. 2, Main Street	107 43
Engine House No. 3, Fourth Street.	37 25
Engine House No. 4, North Avenue	148 12
Engine House No. 5, Inman Square	74 43
Hook and Ladder No. 1, Brattle Square	135 54
Hook and Ladder No. 2, Portland Street	37 51
Chemical No. 1	43 08
	$609 27

Police Department.

A room formerly occupied by the chemical apparatus in the lower story of Central Square building, with an entrance on Green Street, has been fitted up as a stable and room for the patrol wagon, as required by the Police Signal System at an expense of $494.00.

The amounts expended on police stations for repairs have been as follows :—

Station No. 1, Brattle Square	$26 00
Station No. 2, Central Square	172 00
Station No. 3, Fourth Street	41 55
Station No. 5, North Avenue	6 43
	$245 98

The New City Hall.

With the closing of the year the building was completed, and is now occupied, with all external curbing, steps and grading done. In design the building is in the Romanesque style, and in construction is as thorough and complete as anything short of a fire-proof building can be. The heating is by the Sturtevant Hot Blast System, and two large boilers furnish steam for heat and for running the elevator, which is the latest and best pattern. The distribution of hot air through the building is accomplished by means of a fan, which is eight feet in diameter and four feet wide and operated by two engines, all running without noise. Fresh air from without is supplied to the heating chambers and is taken in at the bell-deck of the tower and carried by a shaft to the basement. The building is piped for gas and mixed for incandescent lighting throughout and fitted with the most approved switches and cut-outs. A system of tubes and bells running to the Messenger's office as a centre furnishes means for easy communication between the offices of the several departments. A cutter shute extends from a mail box on the first floor to the second and third floors, with slats for mailing letters on each floor.

For this grand and enduring gift to the City of Cambridge the expressions of our citizens is that of gratitude to the donor, Mr. F. H. Rindge, with satisfaction and a feeling of pride in its possession.

The Old City Hall.

As no disposition has yet been made of the old City Hall building, and the matter of its use in the future still remains in doubt, no appropriation of money can at this time be anticipated. Should changes be decided upon, the expense of the same will be brought to your notice and a necessary appropriation called for.

City Building, Brattle Square.

The Ward One building, Brattle Square, has called for numerous changes and improvements, and the work on boilers and repairs have received the necessary attention.

City Building, Central Square.

The Ward Four building, Central Square, has received many improvements and repairs; boilers have been cared for, roof made tight and plumbing put in good condition.

Industrial School Building.

The Industrial School is at present under the care and guidance of the noble donor, Mr. Frederick H. Rindge, and therefore does not come under the supervision of the Superintendent of Public Buildings.

Public Library Building.

The Cambridge Public Library, now the property of the city, has been placed in charge of a board of trustees, and all matters pertaining to its care and maintenance are entirely under their direction. Both of these structures, beautiful and noble in design and purpose, will ever appear to the eyes of our citizens as enduring monuments of the generous impulses of a philanthropic heart, and when both are under the care of the city it will be a pleasant duty for those in charge to sacredly keep them in their present state and to promote the intention of him who has been so generous to his native city.

The amount expended for repairs has been as follows:—

City Hall	$98 16
Ward 1, City Building, Brattle Square	317 30
Ward 4, City Building, Central Square	707 71
	$1,123 17

I submit estimates of the probable cost for repairs which it will be necessary to make on the public buildings during the ensuing year. So far as is now apparent, there will be required for ordinary repairs on school houses the following sums:—

Allston	$252 00
Agassiz	203 00
Boardman	285 00
Bridge	70 00
Cushing	150 00
Corlett	150 00
Dana	120 00
Dunster	70 00
Amount carried forward	$1,300 00

Amount brought forward	$1,300 00
Felton	150 00
Gannett	160 00
Gore	480 00
Harvard	155 00
Holmes	100 00
Latin	100 00
Lassell	130 00
Lowell	110 00
Mason	15 00
Otis	255 00
Putnam	235 00
Peabody	150 00
Quincy	77 00
Reed	100 00
Riverside	228 00
Shepard	485 00
Sargent	120 00
Stearns	318 00
Thorndike	495 00
Tarbell	258 00
Wellington Grammar	100 00
Wellington Primary	90 00
Washington	220 00
Webster	530 00
Willard	225 00
Wyman	85 00
	$6,671 00

With the completion and occupation of the new English High School on Broadway, as anticipated by the autumn of 1891, the building now used at the corner of Fayette Street and Broadway by that school will need transformation in many of its present appointments for future occupation by the Latin School, which is now located in a building on Lee Street. To what extent changes will be required has not yet been determined; it is presumed that the sanitary arrangements now in use will be removed and replaced by more healthful and modern appliances. The heating system will need inspection, and radical alterations will be required and more efficient provisions for ventilation. The top floors throughout must be taken up and replaced by new floors. Tinting, whitening and painting will be required throughout, drainage improved, the exterior woodwork painted, furniture repaired and some new provided, with many other sundry necessities. The appropriation necessary to meet the expense for changes indicated cannot be stated

now with certainty. An approximate estimate has, however, been made of $18,000.00. Later in the coming year the matter will be more definitely brought to your attention and the necessary appropriation called for.

On city buildings there will be required as follows:—

It is probable that additional work will be required on the new City Hall building during the year, which can only be made apparent as its appliances are put to use. Already some expenditures have been made, and it would be remarkable if a considerable sum is not required to perfect its arrangements. I would respectfully recommend that an appropriation be made for the purpose of at least $2,500.00.

New City Hall	$2,500 00
Central Square building	500 00
Brattle Square building	600 00
Ward Rooms	100 00
	$3,700 00

Fire Department.

The estimated appropriation to meet the necessary repairs and improvements for the ensuing year is as follows:

Engine House No. 1, Brattle Square	$350 00
Engine House No. 2, Main Street	125 00
Engine House No. 3, Fourth street	150 00
Engine House No. 4, North Avenue	75 00
Engine House No. 5, Inman Square	75 00
Hook and Ladder No. 1, Brattle Square	25 00
Hook and Ladder No. 2, Portland Street	175 00
	$975 00

Police Department.

Station 1, Brattle Square	$100 00
Station 2, Central Square	300 00
Station 3, Fourth Street	75 00
Station 5, North Avenue	50 00
	$525 00

An appropriation for sundry repairs and painting of the public bath house, including the expense for additional piles and the enlargement of the pier, etc, for its permanent security throughout the year will be required, amounting to about $425.00.

An expenditure of $75.00 will be required for the Shooting Range.

The estimates for the repairs and improvements on the city buildings amount in the aggregate to $5,700.00.

The estimates for schoolhouse repairs and improvements amount to $6,671.00; flag and staff expense, $100.00—$6,771.00. Gore school contract for sanitary work, $2,650.00; Felton heat regulating apparatus, $287.00—$2,937.00.

By the foregoing report it will be seen that the city has received as an equivalent for its expenditures tangible results in the increase and improvements of its public buildings. The completion of the Putnam Schoolhouse, the commencement and rapid advance made on the English High Schoolhouse, good progress on the Morse Schoolhouse, the erection of an engine-house, the building of a bell and hose tower attached to Engine-house No. 2, the rebuilding of the shooting and target stations, with numerous and extensive alterations and repairs on many schoolhouses and public buildings as stated. The completion, presentation, acceptance and occupation of our grand commodious and modern City Hall building mark a new era in the history of our city improvements. With the increase of our city buildings year by year comes the necessity of enlarged appropriations for their care and preservation.

Respectfully submitted,

BENJAMIN H. STEELE,
Superintendent of Public Buildings.

REPORT

OF THE

INSPECTOR OF BUILDINGS.

OFFICE OF THE INSPECTOR OF BUILDINGS,
CITY HALL, CAMBRIDGE, Dec. 2, 1890.

To the Honorable City Council:—

GENTLEMEN: As required by the City Building ordinance, I have the honor to submit my fifth annual report of the business of this department for the year ending November 30, 1890.

The building activity throughout the year has remained unabated; life and energy have characterized every section of our city, and have been productive of general interest and local pride.

By reference to the tables annexed it will be seen that there have been granted during the year 567 permits for buildings, repairs and alterations. The requirements of the ordinance have received general respect and compliance, with but few exceptions, and an increased regard for the city requirements is noted year by year. The provisions for stability, security and safety have received special attention, and as a consequence a marked improvement in the character of construction is noticeable.

The inspection of new buildings is, under the ordinance, required in the work of this office. Much time is consumed in the granting of building permits, in the examination of plans and specifications, to see that they conform to the ordinance. All buildings are inspected from time to time during the process of construction, alteration or repair, to make sure that the regulations are complied with. The work also embraces the examination of buildings supposed to be in any condition of danger, and the application of proper remedies where danger of any kind appears to exist. It is gratifying to report that generally a prompt and willing compliance to requirements has been accorded and that alterations have been made by owners with but slight hesitation in most cases, and that extreme measures have not been necessary in any case.

Our buildings being constructed mostly of wood, it is more important that increased care, while building, should be exercised. Much attention has been given to the requirements for fire checks, by means of which, in case of fire, it may more readily be confined to the apartment where it originated, thus affording increased security against any extended spread of fire.

Annexed is a table showing the number and character of alterations where the services of the Inspector of Buildings have been required in the interest of public safety.

Buildings in a dangerous condition	21
Dangerous chimneys	36
Wood work too near flues	39
Weak foundations	10
Fire checks ordered	5
Notices to the State Inspector for Fire Escapes	25
Violation of the Building Ordinance	9
	145

The following table shows the number of permits granted in each ward for buildings, etc., and the uses for which they are intended.

	WARDS.					
	1	2	3	4	5	Total.
Dwelling-houses in blocks	18	9	3	13	8	51
Single dwelling-houses	58	39	16	40	57	210
Addition to houses	15	26	5	15	10	71
Storage	5	8	7	8	14	42
Cellar walls	8	7	4	18	6	43
Stables	8	10	3	9	10	40
Stores		2	1		2	5
Factories		10	3	1	3	17
Addition to factories		5		1	2	8
Alterations to buildings	6	8	3	10	5	32
Carriage houses			1		1	2
Offices			1	1		2
School houses	2			1		3
Churches		1				1
Addition to churches	2		1			3
Shops	1	2	2	2	1	8
Bakeries				2		2
Bell tower				1		1
Club house	1			1		2
Green houses	1			1	4	6
Grain elevator					1	1
Addition to school	1					1
Engine house for fire department				1		1
Engine and boiler houses		2	1	1	1	5
Steam boilers	1	2		2	1	6
Chimneys	3			1		4
Totals	130	131	51	129	126	567

Of the foregoing permits 463 were for wooden buildings, 48 for brick and stone buildings, and 56 for sundry purposes, making a total of 567. Those built of brick or stone are as follows:

Addition to churches	2
Factories	4
Bakeries	2
Dwellings and stores	28
Storage	2
School houses	3
Boiler houses	4
Engine house	1
Bell tower	1
Club house	1
	48

Number of permits granted for each month:—

	1889.	1890.
December	27	27
January	33	38
February	27	24
March	59	42
April	72	74
May	53	66
June	46	44
July	51	54
August	46	57
September	54	35
October	48	66
November	43	40
	559	567

It is gratifying in regard to the building interests to be able to present so favorable a report for the year. Our city is fast increasing in wealth, population and business enterprise, which, besides being a source of satisfaction for the present, finds encouraging promise for the immediate future.

Respectfully submitted,

BENJAMIN H. STEELE,
Inspector of Buildings.

REPORT

OF THE

COMMITTEE ON SOLDIERS' AID.

THE Committee on Soldiers' Aid submits to the City Council its report for the year ending November 30, 1890 : —

The amount paid as regular State aid was	$10,173 50
The amount paid to indigent soldiers and sailors was	3,936 00
The amount paid as soldiers' relief was	4,156 82
The amount paid for the burial of deceased indigent or friendless soldiers or sailors was	451 50
The amount paid to the clerk and agent employed in the examination of settlements, etc., was	780 00
Carriage for use of committee	6 00
Printing	15 50
Total	$19,519 32

The amount received from the Commonwealth was	$10,633 50
The amount received from other towns and cities was	72 00
For sundry authorized payments which were not paid	157 75
	$10,863 25

There are now upon the State aid list 209 persons, and upon the list of indigent soldiers and sailors 39. The number of persons upon the soldiers' relief act list is 45.

All of which is respectfully submitted,

EDW. R. COGSWELL,
JOHN R. FAIRBAIRN,
ELMER H. BRIGHT,
D. E. FRASIER,
JOHN E. PARRY,

Committee on Soldiers' Aid.

REPORT

OF THE

BOARD OF CEMETERY COMMISSIONERS.

To the Honorable the City Council of the City of Cambridge:—

THE Board of Commissioners of the Cambridge Cemetery respectfully submits its thirty-seventh annual report, the same being for the year ending Nov. 30, 1890.

The amount appropriated at the beginning of the year was as follows:—

Current expenses	$16,000 00

By a general order of the City Council, approved October 22, 1890, the excess of revenue, in all departments, over the estimated amounts, was credited to the appropriations. On this account the Cemetery appropriation, at the end of the financial year, was increased in the sum of $3,490.77, making the total appropriation as follows:—

For current expenses	$19,490 77
The total amount of expenditure was	16,021 96
This leaves an unexpended balance of	$3,468 81

For a detailed account of expenditures, reference is made to the Auditor's report.

The receipts for the year have been as follows:—

Burial and tomb fees	$4,128 75
Care of lots	4,432 02
Lots and graves	8,134 14
Foundations, brick graves, etc.	1,244 24
Sundries	792 04
Interest on the Cemetery Fund	759 58
	$19,490 77

The estimated revenue was	$16,000 00
The actual revenue was	19,490 77
Excess of revenue over estimate	$3,490 77
Number of public ranges prepared this year	11
Number of graves in above ranges	697
Estimated value of same	$6,970
Number of lots prepared this year	49
Estimated value of same	$16,779 80
Number of lots now ready for sale, old part, 56; new part, 88	144
Estimated value of same	$47,185 60
Single graves ready for sale	113
Estimated value of same	$2,260 00
Amount received for perpetual care in 1889	$4,118 70
Number of lots under perpetual care	172
Amount of fund for perpetual care of lots	$20,975 53
Interest on fund for perpetual care of lots	609 24
Number of interments this year	559
Number of removals this year	10
Total number of interments in cemetery	17,151

During the past season the ordinary work at the Cemetery has been carefully attended to, the paths and avenues graded, and new ranges surveyed and laid out, making a large number of graves prepared for sale.

The continuous rainy weather has been beneficial to the growth of grass, but has compelled constant attention to prevent damage to the driveways and paths. The labor of keeping the grounds in proper condition has been severe, but the expense has been smaller than for years past.

The office has been enlarged and improved, and arrangements have been perfected for its more convenient use by the public.

The Soldiers' Lot has been well cared for. An unusual number of people from all parts of the country have visited the Cemetery during the summer, brought hither by the National Encampment of the G. A. R., and this lot has been subject to much favorable criticism for its fine well kept appearance. The amount expended in its care in 1890 was $337.38, which includes the purchase of headstones and the expenses of foundations and burials.

The old burial ground in Ward One is beginning to show a marked improvement in appearance. The shrubs and trees which have been planted in the rear portion of the grounds are thriving and have grown so large as to nearly cover the unsightly buildings in the rear. The old fence around these grounds has become so badly decayed that a new fence is an absolute necessity, and should be built during the coming season.

It has also become necessary to extend the Fresh Pond Water Supply into that portion of the Winchester Estate which has been laid out and sold in lots.

The Commissioners are pleased to note an increase in receipts over any previous year, resulting in a larger excess of receipts over expenditures than ever before.

The number of lots placed under perpetual care is increasing rapidly and the fund for Perpetual Care now amounts to $20,975.53, an increase over that of 1889 of $4,727.94.

HENRY H. GILMORE,
GEORGE S. SAUNDERS,
DAVID ELLIS,
JOHN F. O'BRIEN,
LEANDER GREELY,
WILLIAM A. BERTSCH,
SILAS B. BUCK,
} *Cemetery Commissioners.*

REPORT

OF THE

CITY ENGINEER.

CITY ENGINEER'S OFFICE, CITY HALL,
CAMBRIDGE, December 1, 1890.

To the Honorable City Council:—

THE twenty-fourth annual report of the City Engineer, showing the operations and expenses of the Departments of Engineering and Sewers, is herewith respectfully submitted.

Office.

The demands upon the Office for services by the other departments, and the public, have been met as promptly as possible. The new method adopted in the Street Department of requiring preliminary estimates of work to be done has very much increased the time required for that part of the work.

The accounts and pay-rolls of the Sewer Department having increased to such an extent as to require a large portion of the time of one assistant, it was decided to engage a clerk and type-writer to take charge of that work, which was accordingly done, through the Civil Service Commission.

There have been employed in the Department during the year six assistants permanently, — not including the clerk, — and two assistants during the summer. All the assistants merit commendation for faithful and efficient service.

Something of the work performed by the department during the year will be shown by the following

Statement.

On application of the Street Department:

Number of street lines given	110
Number of street grades given	107
Number of cars measured (cracked stone)	345
Number of streets on which paving, curb, etc., was measured	106
Number of assessments prepared	213

On application of private parties:

Number of street lines given	153
Number of street grades given	84

Miscellaneous work:

Number of houses measured	225
Number of plans or profiles prepared for sewers	37
Number of plans or profiles prepared for streets	110
Number of surveys at cemetery	8
Number of miscellaneous surveys, profiles and levels made	209
Number of sewer assessments prepared	269

The appropriation for engineering was		$9,100 00
Expended for salaries and supplies	$8,725 90	
Expended for drawing case and furniture at New City Hall	230 00	
Expended for type-writing machine	90 00	
Unexpended balance	54 10	
		9,100 00

BRIDGES.

The following bridges deserve special mention at this time:

Boylston Street Bridge.

This bridge remains in about the same condition as reported last year.

A contract was made with John Cavanagh & Son on the sixth of October, 1890, to widen the passageway for vessels at this bridge to thirty-six feet, in accordance with the Act of Legislature. The work is now well advanced, and the travel is resumed over the bridge, and the work will be finished at an early date. The expense of the widening is to be shared equally by the two cities of Boston and Cambridge.

Brookline Bridge.

The bridge is in good condition. On December 1, 1890, a contract was made with W. A. Kenrick & Son for widening the passageway for vessels to thirty-six feet, as required by Act of Legislature, and also widening the roadway of the draw to twenty-four feet, the two cities of Boston and Cambridge sharing equally the expense. The work under this contract is now well begun.

Harvard Bridge.

This bridge is now practically completed. As the matter of the crossing at the Boston & Albany Branch R. R. and the new avenue is still pending settlement in the courts, the bridge and avenue have not been opened for public travel.

River Street Bridge.

This structure having been several times reported unsafe, and the draw being one of those included in the Act of Legislature referred to above, it was decided to rebuild the bridge on the Cambridge side, widen the portion on the Boston side, giving an increased width of draw-way as required by the Legislature.

A contract was made with Alexander McInnis, on the twenty-ninth of August, 1890, for doing this work which has progressed, with some delays, till the present time, when an early opening of the bridge for travel seems assured.

Sixth Street Bridge.

This bridge, referred to in the last annual report as under contract for rebuilding by John P. Perkins and Son, was completed by them in February, 1890, at a cost of $3,080.00. It is now in good condition.

Western Avenue Bridge.

Owing to the fact that three of the bridges over Charles River were closed to travel, the matter of widening the draw-way to this bridge was deferred until the season of 1891, when it is proposed to widen it to thirty-six feet. The condition of the bridge is about the same as last year.

North Avenue Bridge, at Alewife Brook.

This bridge or culvert is in bad condition. The side-walls are of small stones poorly laid, and are badly bulged in places. The timber floor will not last much longer. The bridge should be rebuilt with proper side-walls and top, and widened out to the full width of the avenue in Arlington.

The rest of the bridges in this city require no special mention at this time.

The streets accepted during the year from December 1, 1889, to December 1, 1890, and the grades established, are shown by the following table:

STREET.					PLAN.		
Name.	From	To	Length in feet.	Width in feet.	Accepted.	Made by	Date.
Brewster Street.....	Sparks Street...	Easterly end of Brewster St	398.79	35	Sept. 17, 1890.	W. A. Mason & Son.	June 3, 1890.
Dover Street*	North Avenue ..	Somerville line	383.70		Sept. 23, "	City Engineer.....	Sept. 16, "
Hancock Street *.....	Main Street ..	Green Street.....	225.00		Nov. 18, "	City Engineer.....	Oct. 20, "
Hamilton Street *.....	Magazine Street	Pearl Street.....	452.00		May 22, "	City Engineer.....	April 22, "
Hollis Street.....	North Avenue ..	Spruce Street.....	701.00	30	July 16. "	W. A. Mason & Son.	June 5, 1888.
Munroe Street	Third Street....	Sixth Street	895.97	50	Dec. 4, "	J. G. Chase.....	Aprll, 1887.
Plymouth Street *.....	Webster Avenue	Hampshire Street.....	408.65		Oct. 7, "	Chas. D. Elliot	Sept. 1876.
Riedesel Avenue.....	Brattle Street...	Brewster Street.....	353.02	35	Sept. 17, "	W. A. Mason & Son.	June 3, 1890.
Rice Street *.....	North Avenue..	Spruce Street.....	1050.00		Sept. 23, "	City Engineer	June 24, 1890.
Scott Street.....	Irving Street ...	Beacon Street	928.67	50	Dec. 11, 1889.	W. A. Mason & Son.	Oct. 20 1889.

* Grade established.

Sewers.

During the year 2.372 miles of sewers have been built, making the total mileage in the city 86.163. The total cost of constructing the sewers to date is $1,111,217.61. Twenty-three persons have been licensed as drain-layers, to whom have been granted 451 permits for doing work connected with private connections.

Belmont Sewer System.

The main trunk sewer for this district, begun in October, 1886, is now completed, and extends from the outlet at Charles River, opposite Lowell Street, to the junction of Cushing Street and Cushing Avenue, a total length of 5,833.3 feet. A good portion of this district has been sewered ready for connection by the abutting owners, 5,787.0 feet of sewers having been built in this district during the years 1889 and 1890.

Bridge Street Sewer.

The flats about the mouth of this sewer have been flushed and dredged as usual.

The flushing was done by the Sewer Department, and the dredging by the New England Dredging Company; 3,322 cubic yards of material were removed at a cost of 60 cents per cubic yard. The total cost of the work was $2,347.63, of which five-ninths were paid by Somerville and four-ninths by the City of Cambridge.

Eliot, Brattle and Harvard Squares Sewer.

The sewer running through these squares from Murray Street to Harvard Square was one of the oldest sewers in the city. It was laid in an irregular line, of field stones and boulders, with open joints and no bottom. The covering stones were loose and rotten, and numerous holes had appeared on the street surface, owing to the earth being carried into the sewer. It was decided to lay a new sewer in this locality on proper lines, and take out such portions of the old as were necessary, and fill it up and make it safe. The frost getting into the ground before the work was completed, it was closed up, and will be finished in the early spring.

Metropolitan Sewerage System.

The work of construction on this great scheme was begun this year, under the direction of the commissioners appointed by His Excellency the Governor.

On the "North Metropolitan Sewer," with which this city will connect, 24,895.0 feet, or 4,715 miles, are now under contract for construction on Deer Island and in Winthrop and East Boston, and the work will be pressed the coming season. It is not likely that this city will be reached for one or two years yet.

Action is being taken by the Supreme Court relative to the appointment of commissioners to apportion the expense of the cost of construction and maintenance of the system according to the provisions of the act of Legislature authorizing the same.

The following is a brief statement of the appropriation and expenditure for sewers: —

Construction "Belmont Sewer System."		
Appropriation	$14,000 00	
Expended	5,830 69	
Balance transferred to "Sewers, Maintenance"	$8,169 31	
Construction "Sundry Sewers."		
Appropriation	$25,000 00	
Expended	16,912 93	
Balance unexpended.		$8,087 07
Maintenance.		
Appropriation	$26,000 00	
Transferred from "Construction Belmont Sewer System"	8,169 31	
Total	$34,169 31	
Expended	28,039 71	
Unexpended balance	6,129 60	

The items of construction and cost of the sewers in detail are fully shown in the following table. All the sewers have been built under the direction of the City Engineer by the Superintendent of Sewers, by day labor.

Sewers Constructed between Dec. 1, 1889, and Dec. 1, 1890.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Allston	Waverly St.	Near Brookline St.	Brick, & Akron pipe	16¾x21¾, 12 and 10	10.1	3	1	66	809.0	†$1,945 65
Belmont District sewer	Holworthy St., through private lands	West of Cushing St.	Brick	27¼x35⅛, 21⅞x28¼	17.0	1		21	489.0	1,160 02
Bowdoin	End of old sewer	Northerly to near Linnæan St.	Akron pipe	10	7.1	1		2	30.9	61 57
Church	Palmer St.	Easterly to near No. Ave.	" "	10	8.9		1	14	156.7	136 18
Cushing (1)	Cushing Ave.	Belmont St.	" "	18 and 10	12.7	2		41	580.5	1,397 41
Cushing (2)	Cushing Ave	Woodlawn Ave.	Brick & Akron pipe	17½x22⅝, 18,15 and 12	11.9	5		103	1,590.5	‡5,127 29
Day	North Ave.	Easterly to near city line	" "	12	8.9	1		29	379 1	425 04
Eaton	Cherry St	Pine St.	" "	10	3.9	1	1	13	181.0	107 56
Eustis Ct.	Oxford St	Harris Ct.	" "	12 and 10	4 4	2	1	47	649.5	416 06
Fairfield	End of old sewer	Northerly to near Spruce St.	" "	10	8.4	1	1	29	325.7	416 48
Farrar	Scott St	Easterly to near Baldwin St.	" "	12 and 10	7.3	2		40	546.0	529 93
Frost	Prentiss Pl.	Southerly	" "	8	7.1		1	6	75.8	44 88
Greenough Ave.	End of old sewer	Easterly to near Highland Ave.	" "	10	5.7		1	7	99.9	68 95
Harris	Oxford St.	Harris Ct.	" "	12	6.5	1	1	25	359.9	320 18
*Healey	Parker St.	Near Buckingham St	" "	10	5.6	1	1	30	379.7	631 67
Locust	Cushing St	Near Holworthy St.	" "	12 and 10	9.5	1	1	21	284.8	394 37
Maynard Pl.	Mt. Auburn St.	Northerly	" "	10	7.2	1	1	25	292.9	371 90
Mifflin Pl.	Mt. Auburn St.	Northerly	" "	10	8.0		1	16	214.2	161 06
Pleasant	Western Ave.	River St.	" "	12 and 10	7.7	1	1	31	413.9	338 31
Plymouth	Near Berkshire St.	Westerly	" "	12 and 10	7.3	1		14	189.8	185 33
Portland	Near Lincoln St.	Northerly to Thorndike St.	Brick, & Akron pipe	22½x29⅛, and 18	11.0	2		44	544.8	1,236 26

* Pile foundation. † Includes cost of Waverly St. sewer. ‡ Includes cost of Woodlawn Ave. sewer.

Sewers Constructed between Dec. 1, 1889, and Dec. 1, 1890 (Continued).

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Putnam Ave....	River St.....	Northerly	Akron pipe	12 and 10	7.8	1		21	190.0	$246 99
Raymond.....	Hubbard Ave.....	Southerly.....	" "	12	9.9			12	178.9	206 58
Sidney.....	Allston St.....	Northerly	" "	12 and 10	6.1	1	1	23	337.2	319 84
Walker Ct.....	Flagg St.....	Southerly	" "	10	8.8		1	13	174.2	186 08
Washington	Clark St.....	Near Windsor St.....	" "	10	6.3	1	1	10	167.4	123 27
Washington	Moore St.....	Near Clark St.....	" "	10	6 3	1	1	16	187.3	127 26
Waverly (see Allton St.).....	Talbot St.....	Allston St.....	Brick	$20\frac{1}{4}$x$26\frac{3}{8}$	10.5	1		1	56.8	
Wendell.....	Oxford	Near Carver St.....	Akron pipe	15 and 12	9.6	2		48	669.5	865 24
Wicklow	Garden St.....	Near Dublin St.....	" "	10	9.4	1		21	298 6	353 38
Windsor.....	Cambridge St.....	North'ly to near city line	" "	12 and 10	7.6	2	1	35	478.7	626 69
William.....	Near Magazine St.....	Westerly	" "	10	6.7	1		6	70.9	76 13
Woodlawn Ave. [see Cushing St. (2)].....	Cushing St.....	Cushing St.....	" "	12 and 10	11.9	4	1	58	1,119.0	
						42	19	888	12,522.1	$18,607 56

Sewers Reconstructed between Dec. 1, 1889, and Dec. 1, 1890.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Austin.....	Main St.....	Prospect St.....	Brick	$25\frac{1}{2}$x$32\frac{3}{2}$, $22\frac{1}{2}$x$29\frac{1}{8}$ $20\frac{3}{4}$x$26\frac{7}{8}$, 17x22	8.0	7		159	1,774.3	$4,649 63
Eliot.....	Murray St...	Boylston St.....	Akron pipe	15	9.5	2		34	488.3	1,841 29
						9		193	2,262.6	$6,490 92

In December, 1889, an exceptionally low bid for sewer pipe having been received from D. W. Lewis, a year's supply of pipe was purchased, stacked in the sewer yard, and drawn on from time to time as required.

On November 12, 1890, a contract was made with Mr. W. E. Rose to alter over a shed and locker in the sewer yard, to make a dwelling-house for the use of the stable man. This much-needed work is now under way.

Alewife Brook.

Complaints having been received from the Fitchburg Railroad, the Cambridge Water Board, and several owners of lands adjoining the brook, of the continued high water in the brook and on the meadows adjacent, the matter was referred to the City Engineer for examination. More careful surveys and levels confirmed the suggestions made on the same subject in the last annual report, and on July 14, 1890, a report was made by the Engineer recommending the lowering of the culverts on the line of the brook, and deepening the bed or channel of the same. Application was made to the City of Somerville and the Town of Arlington for permission to do the necessary work in the portions of the culverts in the limits of the places mentioned. It was intended to do the work on the culverts in the dry months of July and August, but owing to delays in obtaining the required permission from the authorities, and in trying to obtain satisfactory bids for performing the same, it was not begun until September.

The work on the culverts at Broadway, Somerville, and at North Avenue, is now practically completed. The bed of the Broadway culvert was lowered some $2\frac{1}{2}$ feet and paved with solid granite blocks, and the culvert itself, a massive granite arch, was left undisturbed, while the natural flow of the brook was kept up.

The culvert at North Avenue has been lowered also about $2\frac{1}{2}$ feet and paved in a similar manner with granite, while the travel on the Avenue and the flow of the brook were kept up undisturbed.

The work was done by the day under the direction of the City Engineer, by the Superintendent of Sewers, who deserves

much credit for the successful manner in which he handled a difficult and troublesome piece of work.

The Boston & Maine Railroad Company have signified their intention to rebuild the remaining culvert at the Middlesex Central Railroad. No appropriation having been made for dredging out the brook, that matter was not taken up, but now that the two culverts are lowered the dredging should receive early attention, or the work already done on this improvement will be of little use.

The Superintendent of Sewers reports as follows:

L. M. Hastings:—

SIR: The sewers are working well, with some exceptions. The drainage in Austin Street is much improved, and the sewers entering it on the easterly side should be rebuilt. The Brattle Square sewer has been connected with the old sewer at two places, and will work all right until spring, when the work will be resumed. There are some old sewers, built on made land, that have settled and in some cases broken; others were poorly constructed and laid without much regard to line or grade, and stand partly full of sediment and water all the time. There are many that are not deep enough, and the house connections have so little fall it makes the drainage defective.

There are some streets where the water main and sewer are on the same level, and the house drains have to be laid under the water main, in the form of a syphon. Much of this old work will have to be rebuilt at an early day.

Cleaning Sewers.

We have done more flushing this year than last. Nearly 700 feet of hose was purchased early in the summer, making about 1100 feet in the Department in fair condition. The larger sewers will be cleaned during the winter.

Catch-Basins.

There have been 18 new catch-basins built, and 71 repaired during the year. Thirteen North River stones have been set, to replace as many old ones that were broken. Sixty-five wooden covers have been put on.

4167 single loads of dirt have been taken from 1385 catch

basins, the work being carried on during the year when the weather is suitable.

Alewife Brook,

The work on the culverts at Broadway and North Avenue is nearly finished, and will without doubt prove a great benefit when the deepening of the brook is completed. The water in the brook is lower than I have known it in the eleven years of my connection with the Department, at this season of the year. After the heavy rainfall of December 17th, when the ground was frozen and the conditions right for a serious flooding of the meadows, in twenty-four hours the water was as low as it would have been in two weeks under the former condition of the culvert, at Broadway. This improvement when completed will be very beneficial not only to our sewers that enter it, but also to the abutters the entire length of the brook.

Sewer Yard.

The building at the Sewer Yard spoken of in my last report, is being altered into a dwelling-house for the yard man, and will be ready for occupancy by the middle of January.

Labor.

Between 80 and 90 men have been employed, all of whom are on the Civil Service list.

We have 2 horses, 2 sets of harness, 1 open wagon, 1 pung, blankets, robes and other stable equipments; 1 hoisting engine, 1 six-inch submerged pump, 1 pile-driver, 1 boom derrick, 3 hand-pumps, 1 four-legged derrick, 1 Clarkson hoisting machine, and a full assortment of small tools suitable for all work connected with the Department.

We have at the Sewer Yard in stock:—

21 feet 18-inch pipe.
12 pieces 6x18-inch Y branches.
1 piece 12x18-inch Y "
23 pieces 18-inch rings.
1722 feet 15-inch pipe.
132 pieces 6x15-inch Y branches.
1 15-inch curve.
636 15-inch rings.
1504 feet 12-inch pipe.
96 pieces 6x12-inch Y branches.
24 8-inch slants.
29 10x8-inch reducers.
12 8-inch curves.
13 8-inch ¼ bends.
520 feet 6-inch pipe.
33 pieces 6-inch slants.
4 8x6-inch reducers.
15 6x6-inch Y branches.
15 6-inch curves.
3 6-inch ¼ bends.

434 rings.
1 12-inch curve.
1694 feet 10-inch pipe.
3 8x10-inch Y branches.
1 10x10-inch T "
19 10-inch curves.
10 10-inch ¼ bends.
536 feet 8-inch pipe.
32 pieces 6x8inch Y branches.
4 8-inch curves.
42 North River stones for catch-basins.
38 granite curbstones " "
48 granite gutter stones " "
1 set granite curb for iron grate, for catch-basins.
21 round iron covers for catch-basins.
10 square " " " "
6 square iron gratings " "
200 square wooden covers for catch basins.
4 iron traps " "

T. L. PIKE,
Supt. of Sewers.

Water Works.

The rebuilding of the Sixth Street Bridge furnished a favorable opportunity for carrying a pipe across the Broad Canal, and a wooden box syphon was placed under the bridge by the contractors, John P. Perkins & Son, and a 12-inch water pipe placed in the box and carried under and across the canal by the Superintendent.

Reservoir.

It having been decided by the Water Board to rebuild the portions of the retaining walls at the Reservoir, as referred to in the last annual report, work was begun on September 11, 1890, and carried on until the cold weather forbade further progress. On the north end of the Reservoir, the top portion of the old wall was removed, and the old embankment continued on the same slope to the ground. On the Reservoir Street side the old wall commencing at the stand-pipe and working north was removed in short sections, the bank held in place with heavy bracing, and the new wall, of solid granite, built up and capped with heavy granite coping stone, in the manner as recommended last year. The material of which the old wall was built, and its condition as shown in taking it down, was a striking proof that the work was begun none too soon.

Stony Brook.

The works at Stony Brook Reservoir are in good condition. Water has wasted over the dam during eleven months of the year, as follows:—

TABLE SHOWING RAINFALL AT KENDALL GREEN AND ROBERTS DAM IN WESTON AND AT THE FRESH POND PUMPING STATION (CAMBRIDGE WATER WORKS) AND THE HARVARD OBSERVATORY, CAMBRIDGE, FOR THE YEAR DEC. 1, 1889, TO DEC. 1, 1890.

Day of Month.	DECEMBER 1889.				JANUARY 1890.				FEBRUARY 1890.				MARCH 1890.				APRIL 1890.				MAY 1890.				JUNE 1890.				JULY 1890.				AUGUST 1890.				SEPTEMBER 1890.				OCTOBER 1890.				NOVEMBER 1890.			
	Kendall Green.	Roberts Dam.	Fresh Pond.	Harvard Obs.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.	K. G.	R. D.	F. P.	H. O.
1												.05	.26	.14	.32	.35		.11		.12	.16		.16								.12		.29														
2				T							.20		.50	.34	.82	.16						.17		.04							.06														T
3	.14								.11	.15			.52	1.30	.04	.92													.03			.02							1.59							
4		.06							.12		.17	.19				T	.20	.12	.20	T	.10		.89		.33		.36	.36	.04												1.72	1.78	.09	1.42				
5		.14	.20		.24	.13	.21	.17		.17				.18						.06	.97	.83	.03	.71	.60	.22	.06	.03	T			T		.40			T			T				.04				
6	.11			.17				.05				.16	1.03		.35						.57	.40	.91	T	.29	.40	.19	.15					T				1.75		1.03				.18				
7											.30			.50		.33	.43		.43	.12		.74		.88		.25	.32	.21			.02						1.75			1.05	.26	.30	.46				
8			.54						.74		1.44	.18						.50		.20	.41		.66									T									.37	.61	.01	.70				
9	.66	.56	.06	.44			.06			.72		.50					.77	.31	.33	.28		.32		.37									.27		.40	T	T						T				
10				.01	.59		.05	.06	.06	.06	.07							.47	1.52	.49			.26										.14	.42	.08	.23	.09	.60	.09	.09	T		.05		.08			
11	.20	.20	.35			.38	.52	.03				.04	.11		.08						.24	.26		.21	T		.67								.04	.25		.05	.31				.05	.17		.23	.01
12				.08			.03	.40					T	.10		.18									.06		.78	.54					T				.10	.58	.32						.07	.20	.03	.17
13					.03	.38		T						.05							T		.08		.88	.55	.86	1.08									.47	.11	.57	.55								
14		.26	.27						.21		.32		.71		.87	.09					.41		.42	.04	T	.63	.02	.21										T		.05		.42		.36	.02				
15	.38			.35		.51	.66	T		.22		.24	.75	.69	.50	.85				T	.40	.40	.51	.43			T									.60			.43		.04	.08		.41		.32	.20		.23	
16					.69	.14	.32	.39						.64		.22					.26	.52	.05	.38														.84	.75	.67	1.06						.25		
17			.02					T			.34													T										.44			1.48	1.60	.72	.23	1.75	1.08	1.24	1.18	.83		.78	.21
18			.75	T					.24	.22	.02	.20																					.45	.42		.42		.12	.19	.05			.70	.23	T	.83		.76
19	.80	.58		.58								.05	.69		.38											.01		.20		.02			.72	.66						1.15		2.06				.01	
20			.01	T	.05	.50	.06	.04	.80	.65	.50	.66		.66		.55					.44		.70						.14	.20		.95			.73					1.22	1.80	.04	1.93				
21											.15		.05			T						.60		.67							T			.13						.05						
22	.26	.26	.28					T					1.07		1.65	T																		.24	.05									T			
23				.09	.01	.50	.08						1.17	1.93	.07	1.59																	.85		.43	.21									T			
24			.64					.07			.06	T				T			.10							.28	.22				.36			.25		.12					2.39	.42	.26	.29				
25	.41	.41		.40					.51		1.04	T			.25		.13	.50	.17	.07					.11			.22	.64		.20	.44		.25							1.98	1.87	1.62				
26	.03		.08				.56		.08	.67		.58	.22			.26		.90	1.77	.03			.57						.24	.57	1.56	.14			.90		.32										
27					.71	.27	.09	.49	T		.02				.10		.88	.72	.31	.66	1.11	.58	.74	.66	T		.02			.72		.75	1.16		.03	.95		.27	.32	.28								
28							.24	T	.09		.59	T	.64		1.17	.18		.10				.73	.11	.59										1.12		T								T				
29	.07	.06	.10	.10	.19								.10	1.13		.70						.10		.08					T		.09	.07									.36		.40	T				
30						.20	.02	.27							.09	T														.70			.30		.17							.46		.29				
31					.05		.04								.10														.30	.53	.26			.25		.11												
Total	3.06	2.53	3.30	2.22	2.56	3.01	2.94	1.97	2.96	2.86	5.22	2.85	7.82	7.43	7.02	6.53	2.41	3.73	4.83	2.03	5.07	5.65	6.09	5.06	2.24	2.33	3.51	2.80	1.47	2.66	2.77	1.42	4.24	4.43	3.48	3.15	5.73	5.78	4.05	3.70	9.64	8.89	9.31	8.09	1.35	1.28	1.28	1.15

December, 1889	1,366,221,000 gallons.
January, 1890	623,218,000 gallons.
February, "	660,844,000 gallons.
March, "	2,067,544,000 gallons.
April, "	1,069,468,000 gallons.
May, "	875,380,000 gallons.
June, "	424,766,000 gallons.
July, "	18,740,000 gallons.
August, "	
September, "	6,000,100 gallons.
October, "	1,160,575,200 gallons.
November, "	657,092,000 gallons.

Making a total of 8,929,848,300 gallons wasted during the year.

The comparison by months is shown in the following table:—

		1889.	1890.											
		Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Total.
Kendall Green.	No. of days in which rain fell.	10	9	10	14	5	11	6	6	8	9	9	5	102
	Total precipitation.	3.06	2.56	2.96	7.82	2.41	5.07	2.24	1.47	4.24	5.73	9.64	1.35	48.55
Roberts Dam.	No. of days in which rain fell.	9	9	8	10	9	12	6	5	9	8	10	3	98
	Total precipitation.	2.53	3.01	2.86	7.43	2.47	5.65	2.33	2.66	4.43	5.78	8.89	1.28	49.32
Fresh Pond.	No. of days in which rain fell.	12	14	12	17	8	14	11	9	10	11	14	5	137
	Total precipitation.	3.30	2.94	5.22	7.02	4.83	6.09	3.51	2.77	4.48	4.05	9.31	1.28	54.80
Harvard Observatory.	No. of days in which rain fell.	9	10	11	14	9	12	8	5	10	9	12	4	113
	Total precipitation.	2.22	1.97	2.85	6.53	2.03	5.06	2.80	1.42	2.85	3.70	8.09	1.15	40.67

Numerous hearings have been held in the settlement of cases arising from the taking of water or land by the Water Department in connection with the Stony Brook improvement. The cases of Mrs. Gay and of the Fresh Pond Ice Company for land taken at Fresh Pond have been settled.

In the case of Rhodes & Ellsworth for water-power taken on Hobbs' Brook (now settled), and of Sibley for land and water-power at Stony Brook (still before Commissioners), much time has been given in preparing data for, and attending the hearings.

Several important cases have not yet been brought to trial.

Respectfully submitted,

L. M. HASTINGS,

City Engineer.

REPORT

OF THE

SUPERINTENDENT OF STREETS.

To the Honorable the City Council:—

GENTLEMEN: In accordance with the requirements of the ordinance relating to streets, I have the honor to submit my first annual report for the year ending November 30, 1890.

The appropriation for "Street Department, Maintenance," including building, repairing and cleaning streets, and the collection of ashes was	$110,751 57
Amount expended	110,650 77
Balance unexpended	$100 80

Of the above appropriation, $27,092.85, or about one quarter, was expended before I assumed the office.

The detailed account of expenditures of this department, as per Auditor's report, is as follows:—

Street Department, Maintenance.

For salary of Superintendent, E. H. Reed	$1,124 06	
" " " " John McSorley	575 94	
		$1,700 00
For labor, as per pay rolls		63,558 02
Teaming		16,354 50
Fuel		737 84
Gravel and screenings		393 00
Hardware, tools, machinery and repairs		1,741 02
Horses, feed	3,924 25	
Purchased and exchanged	750 00	
Hire	11 00	
Shoes and shoeing	157 26	
Veterinary surgeon and medicines	242 81	
Harnesses, wagons and repairs	1,075 83	
Stable repairs and fittings	1,006 92	
		7,168 07
Steam roller		4,000 00
Amount carried forward		$95,652 45

Amount brought forward	$95,652 45
Stone, field and cracked	12,826 01
Lumber, lime and cement	1,183 68
Oil, paint, etc	180 95
Sundry supplies	80 21
Carriage hire for Committee	108 00
Directories	10 00
Drain work	22 91
Expressage and freight	4 03
Gas	203 93
Stationery and printing	240 69
Street signs	60 35
Telephone rent and tolls	54 60
Water supply	22 96
	$110,650 77

The following schedule shows the manner in which the above expenditures have been applied:—

Grading and patching streets	$33,921 23
Cleaning streets (estimated)	25,000 00
Collection of ashes	14,488 32
Winter work, care of snow and ice, crushing stone, overhauling tools, carts, etc.	18,871 98
Maintenance of the department, including feed and care of horses, harness and wagon repairs, etc.	7,355 51
Steam roller	4,000 00
Stable repairs and fittings	2,417 42
Superintendents' salary and office expenses	2,855 29
Tools, hardware, etc.	1,741 02
Total	$110,650 77

By reference to the above schedule, it will be seen that while the appropriation for this department is over one hundred and ten thousand dollars, the amount actually available for construction and repairs of streets is but little more than one-quarter of that amount, and it can hardly be expected that the streets can be kept in proper condition with such a small appropriation.

The character of our streets is well known to most of our citizens to be low and flat, with poor foundations, and the material we have been obliged to use has been of most inferior quality. As early as possible the coming year we hope to obtain suitable material for top-dressing and grading the streets under favorable conditions for handling the same.

Most of the wear and tear of our streets is due to the large amount of heavy teaming through the city from the surround-

ing towns, this city being their main thoroughfare to Boston. The only way in which these thoroughfares can be kept in proper condition is to heavily macadamize or pave the principal streets. This means of course a larger expenditure of money, and I would recommend that a very much larger appropriation be made for this department the coming year.

The sudden and unlooked-for early frost this year has prevented our giving the streets the thorough cleaning which they need, and this matter will be one of the first things undertaken when the season opens.

The following streets have been graded between the points named during the past year at a total expense of $23,831.73:—

Brattle Street and Brattle Square, from Mt. Auburn Street to Boylston Street.

Brookline Street, from Main Street to Pilgrim Street.

Cherry Street, from Harvard Street to Main Street.

Clark Street, from Hampshire Street to Harvard Street.

Columbia Street, from Main Street to Austin Street.

Concord Avenue, from Walden Street to Railroad Street.

First Street, from Spring Street to Cambridge Street.

Franklin Street, from Brookline Street to Sidney Street.

Franklin Street, from Soden Street to Putnam Avenue.

Gore Street, from Bridge Street to Somerville line.

Hancock Street, from Green Street to Kinnaird Street.

Harvard Street, from Prospect Street to Inman Street.

Highland Street, from Sparks Street to Appleton Street.

Main Street, from Prospect Street to Pleasant Street.

Maple Avenue, from Cambridge Street to Broadway.

Mason Street, from Garden Street to Brattle Street.

Norfolk Street, from Cambridge Street to Somerville line.

North Avenue, from Chauncy Street to Jarvis Street.

North Avenue, from R. R. Crossing to Arlington line.

Pine Street, from School Street to Harvard Street.

Potter Street, from Binney Street to Sixth Street.

Prospect Street, from Main Street to Broadway.

Raymond Street, from Linnæan Street to Lambert Avenue.

Sixth Street, from Cambridge Street to Bent Street.

Thorndike Street, from Fourth Street to Fifth Street.

Tremont Street, from Cambridge Street to Hampshire Street.

Wallace Street, from Shepard Street to Garden Street.

Washington Street, from Winsor Street to Pine Street.

William Street, from Magazine Street to Pleasant Street.

The following streets have been patched more or less at different times during the past year:—

Acacia Street,
Agassiz Street,
Appleton Street,
Arlington Street,
Arrow Street,
Ash Street,
Auburn Street,
Avon Street,
Auburn Place,
Blake Street,
Bow Street,
Boylston Street,
Brattle Street,
Brewster Street,
Broadway,
Cambridge Street,
Cedar Street,
Charles Street,
Chauncy Street,
Church Street,
Cleveland Street,
Cogswell Avenue,
Concord Avenue,
Craigie Street,
Cushing Street,
De Wolfe Street,
Dover Street,
Ellery Street,
Everett Street,
Felton Street,
Flagg Street,
Florence Street,
Foster Street,
Franklin Street,
Frost Street,
Garden Street,
Garfield Street,
Green Street,
Hampshire Street,
Harvard Street,
Hawthorn Street,
Highland Avenue,
Holworthy Street,
Hudson Street,
Irving Street,
Kinnaird Street,
Kirkland Street,
Lake View Avenue,
Lambert Avenue,
Lambert Street,
Lancaster Street,
Larch Street,
Linnæan Street,
Magazine Street,
Main Street,
Martin Street,
Mason Street,
Meacham Street,
Mill Street,
Mount Auburn Street,
Mount Pleasant Street,
Norfolk Street,
Norris Street,
Otter Street,
Oxford Street,
Pearl Street,
Pleasant Street,
Plympton Street,
Portland Street,
Prescott Street,
Quincy Street,
Rice Street,
Richdale Avenue,
River Street,
Roseland Street,
Sacramento Street,
Shepard Street,
Spruce Street,
Third Street,
Tremont Street,
Trowbridge Street,
Vine Street,
Wallace Street,
Walden Street,
Ware Street,
Washington Avenue,
Wendell Street,
Western Avenue,
Winsor Street,
Winter Street.

The expense of patching the above named streets was $10,089.50, and this large amount was necessitated by the fact that the appropriation was insufficient to allow for properly grading these streets. We shall, however, be obliged to continue this policy until larger appropriations can be made, when we shall be able to do more grading and less patching.

The following streets have been accepted during the past year:

Brewster Street, from Sparks Street to Brewster Street heretofore accepted.

Dover Street, from North Avenue to the Somerville line.

Hancock Street, from Main Street to Green Street.

Hamilton Street, from Magazine Street to Pearl Street.

Hollis Street, from North Avenue to Spruce Street.

Munroe Street, from Third Street to Sixth Street.

Plymouth Street, from Webster Avenue to Hampshire Street.

Riedesel Avenue, from Brattle Street to Brewster Street.

Rice Street, from North Avenue to Spruce Street.

Scott Street, from Irving Street to Beacon Street.

Paving Bridge Street.

The appropriation for paving Bridge Street was	$18,000 00
Amount expended	17,997 68
Balance unexpended	$2 32

This amount has been expended in the purchase of paving blocks, North River flagging, gravel, etc., and for teaming and the labor of paving Bridge Street, from the bridge line to the Somerville line, including part of Lechmere Square.

The appropriation as originally made only contemplated the paving of Bridge Street, from the bridge line to East Street, on the north side, and to First Street, on the south side; but the action of the West End Railway Company in raising the tracks to the grade as given by the City Engineer rendered it necessary to complete the paving on both sides of the street to the Somerville line, which has been done without any increase in the appropriation. The sidewalks on this street have been left unfinished by reason of the action of the Board of Aldermen in ordering the removal of all encroachments on the line of the street, the limit of time for which did not expire until December first.

Owing to the reluctance of abutters to remove encroachments and the unusually early winter this year, we shall not be able to complete these sidewalks until next spring.

Paving, Edgestones and Sidewalks.

The appropriation for paving, edgestones and sidewalks was	$19,000 00
Surplus revenue	1,457 16
Transferred from appropriation for widening Main Street	1,659 00
Total	$22,516 16
Amount expended	21,637 97
Balance unexpended	$878 19

The detailed account of expenditures of this department, as per Auditor's report, is as follows:—

Advertising	$31 50
Bricks	3,400 89
Crossing stone	220 00
Edgestones and circles	5,254 47
Gravel and sand	863 36
Labor, as per pay-rolls	10,451 09
Lumber and cement	35 11
Oil	72 14
Paving blocks	60 79
Paving, round stone	541 53
Rope	22 01
Stationery and printing	19 50
Sundries	1 65
Teaming edgestones	615 43
Tools and implements	48 50
	$21,637 97

The large balance unexpended is due to the fact that we were obliged by the weather to leave unfinished sidewalks in several streets, which will be completed at the beginning of next season.

The following schedule shows the amount of work done under the expenditures as shown above:—

Description of Work.	Square Yards.	Square Feet.
New straight edgestone set	....	12,751
New circle edgestone set	....	460
Old straight edgestone reset	....	8,770
Old circle edgestone reset	....	23
New brick sidewalk paved	4,081	....
Old brick sidewalk repaved	5,412	....
Old crossings repaved	4,469	....
New North River flagstone crossings laid	....	1,246
Granite block paving	2,008	.. .
Gutter paved	8,988	....

The present City Government has already passed an order for the purchase of three hundred thousand granite paving blocks, and the Committee on Roads and Bridges have made a contract for that amount. I would recommend that these blocks be used in paving Cambridge Street; from the Grand Junction Railroad to Columbia Street; as this is one of the most heavily travelled thoroughfares in our city, it will save the large expense of patching every year. I would also recommend that the following streets between the points named be paved at the earliest date possible:—

Cambridge Street, from Columbia Street to Inman Square.
Western Avenue, its entire length, including Central Square.
Main Street, from Central Square to Harvard Street, River Street and Prospect Street.

The city needs and should own a good gravel bank, from which we could quickly and easily obtain gravel for paving purposes, rather than be obliged, as we have been, to buy it by the load at varying prices throughout the year. I trust that steps may be taken early in the year towards supplying this one of the chief needs of the department. I most earnestly recommend that the appropriation for this department may be sufficiently large to allow for the granting of all petitions for brick sidewalks and edgestones as far as practicable. As the abutters are obliged by law to pay the cost of material used in the construction of such sidewalks, it would seem that the policy of the city should be to encourage them in this direction, rather than by reason of an insufficient appropriation compel them to wait year after year, while the cost during that time for repairs would almost cover the outlay for new work. Aside from this the streets can be kept in better repair at a very much reduced cost to the city, after edgestones have been set.

North River Flagging Stones for Street Crossings.

A special appropriation of $1,000.00 (all of which has been expended) was made this year for the purchase of North River flagging stone for street crossings.

All of this has been laid, as shown by the schedule of work done under the head of "Paving." The need of more street crossings is becoming more apparent every year, and I would

recommend that provision be made for laying a larger amount next year.

Street Watering.

The appropriation for street watering was	$18,935 99
Amount expended	16,716 47
Balance	$2,219 52

This amount was expended in the repairs to carts, incidental expenses, and the payment of contractors for sprinkling the streets. The streets have been watered this year every day when necessary, including Sunday mornings, from April first to December first. The present system of watering the streets wholly by contract is not entirely satisfactory, and better service could be given if the principal streets and avenues were watered by the city teams, leaving only a part of the work to be done by contract. The work should also be in charge of a foreman who could give his entire time to it; and while this would increase the expense, we should be more than repaid by the manner in which the streets could be watered.

The area of streets to be watered is increasing every year, and we shall need several new carts next season. The old carts will need very little repairs this winter, and they can all be made by our regular men at the City Yard.

Bridges.

The appropriation for Bridges was	$32,000 00
Amount expended	10,798 43
Balance	$21,201 57

The large unexpended balance shown above is accounted for by the fact that the final payments are yet to be made upon contracts for widening several of the draws. The condition of the bridges, under the care of this department, is shown by the following extract from the City Engineer's report: —

BOYLSTON STREET BRIDGE.

This bridge remains in about the same condition as reported last year. A contract was made with John Cavanagh & Son on the 6th of October, 1890, to widen the passageway for vessels at this bridge to thirty-six feet, in accordance with the Act of Legislature. The work is now well advanced and travel has

been resumed over the bridge; the work will be finished at an early date. The expense of the widening is to be shared equally by the two cities of Boston and Cambridge.

BROOKLINE BRIDGE.

This bridge is in good condition.

On December 1, 1890, a contract was made with W. A. Kendrick & Son for widening the passageway for vessels to thirty-six feet as required by Act of Legislature, and also widening the roadway of the draw to twenty-four feet; the two Cities of Boston and Cambridge sharing equally the expense. The work under this contract is now well under way.

RIVER STREET BRIDGE.

This structure having been several times reported unsafe, and the draw being one of those included in the Act of Legislature referred to above, it was decided to rebuild the bridge on the Cambridge side, and widen the portion on the Boston side, giving an increased width of draw-way as requested by the Legislature.

A contract was made with Alexander McInnis on the 29th of August, 1890, for doing this work, which has progressed with some delays till the present time, when an early opening of the bridge for travel seems assured.

SIXTH STREET BRIDGE.

This bridge referred to in the last Annual Report, as under contract for rebuilding by John P. Perkins & Son, was completed by them in February, 1890, at a cost of $3080.00. It is now in good condition.

WESTERN AVENUE BRIDGE.

Owing to the fact that three of the bridges over Charles River were closed to travel, the matter of widening the draw-way to this bridge was deferred until the season of 1891, when it is proposed to widen it to thirty-six feet. The condition of the bridge is about the same as last year.

Shade Trees and Public Grounds.

The appropriation for this department was	$5,113 10
Amount expended	5,003 35
Balance	$109 75

This department has the care of all the commons and squares, the grounds and walks around the Public Library and the new City Hall, and all the trees in the streets of the city. It will be necessary next season to build new plank walks for the commons and squares, and an increased appropriation should be made to allow for that work.

In General.

The office work of the department has been systematized, and accurate and detailed accounts are kept of all work done on the streets. Information can be obtained at the office of the cost of construction, paving, or the repairs on any given street, and the number of openings made in it during the year. Permits to open, obstruct, or encumber streets, formerly granted under petition to the Board of Aldermen, are now granted from the office, thus saving the delay to petitioners who were obliged to wait for the regular meetings of the Board. That this has been a great convenience is shown by the fact that from May 19th to December 1st, a period of about six months, 554 permits have been granted. All the supplies for the department are purchased upon requisitions from the office, and duplicate invoices are kept for reference. A record of each horse is kept from the time of purchase to his final disposal. All accidents coming under the observation of the employés of the department are reported to the office, where as full particulars as possible, including names of witnesses, etc., are kept on file.

The schedules of sidewalks laid are now reported from this office to the Board of Aldermen, and assessments for the same are levied on the abutters as soon as the work is completed. The daily police reports of defects in streets and sidewalks are promptly attended to by the foremen, and a return is made to the office by them on blank forms of the time they receive the reports and finish the work.

At the city stable on Hampshire Street a new overhead system of feeding has been put in, making a considerable saving of hay and grain. Four new ventilators have been constructed there, contributing very largely to the present healthy condition of the horses.

The city has been divided into two districts, all the territory

east of Dana Street, comprising District No. 1, being in charge of Foreman J. A. Sheridan, and all west of Dana Street, in charge of Foreman C. A. Brown, being designated as District No. 2.

It being evident at once that a stable would be required for the second district, a part of the wharf and buildings of the Cambridge Gas Company on Ash Street has been leased by the city and a small stable fitted up there. Ten horses are kept there all of the time, and on Mondays and Tuesdays the ash teams are fed there, thus saving the time of driving across the city at noon. In August of this year an American steam roller of the Harrisburg Machine Co.'s make was purchased at an expense of $4,000 and placed in the second district, where it has been in constant use during the past season.

The stone crusher at the City Yard has not been run this year on account of the expense of working it as originally constructed, and we have been able to purchase cracked stone cheaper than we could make it. The crusher is now being remodelled, a new elevator is to be put in, and bins for storing different sizes of cracked stone are to be built, and next year we shall be able to produce cracked stone at a very much reduced cost.

Early this year it was suggested that the collection of ashes might be done more economically by contract, but after careful investigation, I am satisfied that it can be done much better by the city, under the present system.

The city is divided into sections and a route is laid out for each day of the week. Eight teams have been regularly employed on this work, with an additional one at times, and during next year the force will have to be increased.

By the city ordinances this department is required to remove rubbish, yard cleanings, etc., during the months of April and October. I would recommend that these months be changed to May and November, as a number of our citizens do not have their gardens and yards cleaned until most of the leaves have fallen, and are therefore compelled, under the present system, to have the rubbish removed at their own expense.

One of the chief causes of the wear of our streets is a lack of a sufficient number of catch-basins to carry off the surface water, and I would recommend that as many as possible be put in next year.

Schedule of the Property of the Street Department.

Land and buildings at City Yard (assessed value)	$47,000 00
Thirty-seven horses	9,250 00
Thirty-six watering carts	10,800 00
One engine and stone crusher	3,500 00
Two steam road rollers	8,000 00
Four-horse road rollers	1,000 00
Twenty-six carts	3,250 00
Thirty-four sets of harness	850 00
Eight wagons	400 00
Twenty-nine sleds and snow ploughs	1,875 00
Tools and stable furniture	1,500 00
One hay rack	100 00
One caravan	150 00
One lawn hand cart	80 00
Six lawn mowers	90 00
Three pungs	75 00
Three street sweepers	815 00
Garden hose	25 00
Two hundred tons of gutter stone	400 00
One hundred and fifty thousand block stone	3,000 00
Two hundred and fifty tons of crossing block	375 00
Two hundred and one feet straight edgestone	86 43
Eighty-four feet circle edgestone	61 00
Six hundred and forty-two feet of flagging	487 92
One hand pump	65 00
	$93,235 35

In conclusion, I desire to express my thanks to His Honor the Mayor and to the members of the Joint and Standing Committees for their generous coöperation and assistance during the year, and to the members of the City Council for their encouragement and approval. My acknowledgments are also due to the foremen of the department, Mr. John A. Sheridan and Mr. Charles A. Brown, for their prompt and cheerful compliance with orders and the interest they have taken in the department. I am also indebted to the heads of the different departments for their courtesy and consideration in matters affecting this department.

Respectfully submitted,

E. H. REED,
Superintendent of Streets.

REPORT

OF THE

COMMISSIONER ON WEST BOSTON, CRAIGIE'S AND PRISON POINT BRIDGES.

To the Honorable the City Council of the City of Cambridge: —

THE Commissioner for West Boston, Craigie's and Prison Point Bridges submits for himself and associate the twentieth annual report of the matters pertaining to West Boston and Craigie's Bridges, and the fourteenth annual report on Prison Point Bridge.

West Boston Bridge.

The widening contemplated in the act of the Legislature of 1889 (printed in appendix to last report) has not been made, and there is no immediate prospect of its being done.

It will be necessary to make the repairs on the southerly side of the bridge from the draw to the Cambridge abutment, which have been delayed on this account, during the coming year, as this part of the bridge is in dangerous condition.

The West End Street Railroad Company has again relaid its tracks and track timbers for the entire length of the bridge, and the repaving of the roadway incidental to the work has been done.

The bridge on the Cambridge side, as also Craigie's Bridge, has been lighted by electricity as usual, and the light has been furnished this present year from the electric lighting station in Cambridge at a lower rate than has been paid heretofore.

The repairs before mentioned on the southerly side of the bridge include the rebuilding of the sidewalk, fence, and more or less of the adjoining roadway; also the repaving, with the old stones, of the roadway between the railroad track and the edgestone. It will also be necessary to rebuild a part of the

bulkhead and sidewalk between the draw and the Boston end, and to repave the roadway with the old material.

The machinery for turning the draw will need attention. The boiler is worn out and must be replaced with a new one. The engine and gearing should be overhauled and put in good condition. The draw has been painted.

The statements made in the last report concerning the need of a more modern and capacious bridge on this site are still applicable.

Canal or Craigie's Bridge.

The roadway pavements from the draw to the Cambridge end (about 800 feet in length) have been relaid with the old paving blocks and all deficiency made up with new blocks. The edge-stones have been reset and the pavement on the remaining part of the bridge extensively patched and put in good order. The planking under the roadway is generally in good order. About three hundred feet in length of bulkhead at the side of the bridge has been rebuilt and the adjoining sidewalk repaved.

The draw and fences on the entire bridge have been painted, and also the engine house.

The fender guard on the south side of the bridge is in bad condition, and the sides of the passageway for vessels is in need of replanking.

Prison Point Bridge.

The gearing for raising the draw has been repaired. The draw-tender's house has been painted.

The surface of the draw pier is in bad condition and should be replanked.

In General.

The usual statement is appended of the number of draw openings and the number of vessels passed through.

The amount of revenue received for dockage, rent and repairs on horse railroad track during the year has been $605.40.

Respectfully submitted,

WILLIAM J. MARVIN,

Bridge Commissioner for Cambridge, and Harbor Master on Charles and Miller's Rivers and Broad Canal.

DECEMBER 16, 1890.

Number of times the draws on West Boston, Craigie's and Prison Point Bridges have been opened and the number of vessels which have passed through during the year:

Date.	West Boston Bridge.		Canal or Craigie's Bridge.		Prison Point Bridge.	
	Number of Draw Openings	Number of Vessels Passed Through.	Number of Draw Openings	Number of Vessels Passed Through.	Number of Draw Openings	Number of Vessels Passed Through.
December, 1889.....	110	164	204	210	30	34
January, 1890.....	24	34	60	61	2	2
February, "	15	22	22	38	8	8
March, "	31	41	96	97	6	8
April, "	79	114	279	296	32	36
May, "	123	201	367	370	27	31
June, "	189	297	367	367	22	22
July, "	279	417	450	462	36	40
August, "	223	355	465	470	38	41
September, "	230	360	416	458	20	24
October, "	193	300	401	464	23	26
November, "	180	300	408	425	11	15
Total.....	1686	2605	3545	3718	255	287

Statement of traffic over bridges West Boston and Craigie's, December 10, 1890, from 6 A. M. to 7 P. M.: —

WEST BOSTON BRIDGE.

Teams to Boston	1,628
Foot passengers to Boston	1,927
Horse and electric cars to Boston	753
Teams to Cambridge	1,476
Foot passengers to Cambridge	1,758
Horse and electric cars to Cambridge	683

CRAIGIE'S BRIDGE.

Teams to Boston	2,455
Foot passengers to Boston	3,373
Horse cars to Boston	259
Teams to Cambridge	2,522
Foot passengers to Cambridge	3,489
Horse cars to Cambridge	272

PRISON POINT BRIDGE.

December 15, 1890, from 6 A. M. to 7 P. M.: —

Teams (both ways)	1,785
Foot passengers (both ways)	1,375

Statement of the number of passengers carried by the cars of the West End Railroad Company over West Boston and Craigie's Bridges on Tuesday, December 16, 1890, from 6 A. M. to 12 P. M.: —

	Inward.	Outward.
West Boston Bridge	14,796	15,805
Craigie's Bridge	6,575	5,264
Total	21,371	21,069

REPORT

OF THE

CAMBRIDGE WATER BOARD.

To the Honorable City Council of the City of Cambridge:—

THE Water Board herewith submits to you its twenty-sixth annual report, being for the year ending November 30, 1890:

Total Cost of the Works.

Cost of the Water Works, November 30, 1889, as per last year's report	$2,610,333 09
Expended during the past year	257,401 74
Making the total expenditure to November 30, 1890	$2,867,734 83

Water Bond Account.

Whole amount of Water Bonds issued . . .	$2,659,900 00
Amount paid from the Sinking Fund . . .	888,400 00
Leaving unpaid Water Bonds	$1,771,500 00
From this deduct the present value of the Water Debt Sinking Fund, as per the Trustees' account	765,754 67
Leaving the amount of Water Bonds yet to be provided for by the Sinkiug Fund in the future	$1,005,745 33

Statement in brief of the transactions in connection with the Water Works for the year ending November 30, 1890: —

General Construction Account.

RECEIVED.

From excess of rates, fines, etc.	$46,917 51
From sale of pulley, shafting, etc.	69 64
	$46,987 15

EXPENDED.

Amount expended on general construction .	$46,987 15

Stony Brook Construction Account.

RECEIVED.

Balance of appropriation of 1889	$11,346 50

EXPENDED.

On Stony Brook account	11,707 70
Appropriation overdrawn	$361 20

Fresh Pond Land Purchase Account.

RECEIVED.

Balance of appropriation of 1889	$727 97
From bonds issued	200,000 00
Premium on bonds sold	12,120 25
	$212,848 22

EXPENDED.

For purchases, and settlement for estates taken, bordering on Fresh Pond . . .	$198,706 89
Balance unexpended carried to new account .	$14,141 33
	$212,848 22

Water Rates, Fines, and Supply Account.

RECEIVED.

From water rates	$233,317 92	
Less rates refunded	2,201 30	
		$231,116 62
Shutting off, letting on, sealing, fines, and rent		892 39
From supply account		6,592 38
Accrued interest on bonds sold		627 77
From construction account		69 64
Sale of hay, pump, fruit, etc.		436 68
		$239,735 48

EXPENDED.

For general construction account	$46,987 15
For maintenance account	40,037 70
For supply account	5,625 24
For interest on Water Bonds	82,195 00
Paid into the Sinking Fund, being three per cent. on $1,631,500	48,945 00
Supplies of 1890 carried to the Sinking Fund .	15,945 39
	$239,735 48

Comparative Statement in Receipts.

Water-rates for the year 1890	$231,116 62
Water-rates for the year 1889	221,124 70
Showing excess of water-rates in 1890 . . .	$9,991 92

Comparative Water Supplied.

Amount of water pumped in 1890, gallons .	1,638,550,512
Amount of water pumped in 1889, " .	1,526,439,005
Showing an increase over 1889, " .	112,111,507

How the Water was Used.

Amount of water sold by meter, gallons . .	362,806,000
Amount used in watering streets, " . .	58,682,500
Amount used for domestic, fire, fountain, and all other purposes, gallons	1,217,062,012
	1,638,550,512

Statement of Daily Consumption.

Daily average pumping for the year for the high service through the stand pipe, gallons .	410,793
Daily average pumping for the year for the low service or Reservoir service, gallons .	4,078,387
Making daily average pumping, gallons . .	4,489,180

Daily Increase in Consumption of Water.

Daily increase in consumption, 1886 over 1885, gallons	302,909
Daily increase in consumption, 1887 over 1886, gallons	476,307
Daily increase in consumption, 1888 over 1887, gallons	276,547
Daily increase in consumption, 1889 over 1888, gallons	44,078
Daily increase in consumption, 1890 over 1889, gallons	307,155

Remarks.

By an examination of the following table it will be seen that while there is a constant increase of the water used for legitimate purposes, yet the daily average consumption is to a large extent dependent on the amount and uniformity of the rainfall during the summer months. During the months of June, July, and August of 1889, the rainfall was 15.75 inches; during the same time of 1890, it was 9.76 inches, a difference of six inches.

Comparative Rainfall and Height of Water in the Fresh Pond Storage Reservoir.

Months.	Rainfall.				Water in the Reservoir below 16.85, or High-water Mark.			
	1887.	1888.	1889.	1890.	1887.	1888.	1889.	1890.
	Inches.	Inches.	Inches.	Inches.	Feet.	Feet.	Feet	Feet.
December, 1889.....	5.23	4.22	6.67	3.36	10.37	8.55	.91	1.10
January, 1890.....	5.28	3.32	6.64	2.94	10.80	5.37	.55	1.62
February, " .. .	4.66	3.95	2.81	5 22	9.95	3 69	1.07	1.20
March, "	4.46	5.55	3.29	7.02	9.52	1.72	1.03	1.06
April, "	3.94	2.60	3.73	4 83	9.04	1 14	.88	.32
May, "	1.79	6.36	5.65	6.09	9.30	.81	.87	.67
June, "	1.86	3.25	3.44	3.51	10.20	1.12	.62	1.01
July, "	4.19	2.87	8 53	2.77	11.61	2.39	1.28	2 32
August, "	4.10	7.08	3.78	3.48	12.68	3.75	.84	2.17
September, "	1.36	8.28	5.30	4.05	12.73	3.24	2.06	1.92
October, "	3.22	4.83	3.73	9.31	12 66	1.37	2.81	2.06
November, "	3.90	7.70	6.51	1.28	12.05	1.25	1.75	.94
					Average	Average	Average.	Average.
Result for the year.	43.99	60.01	60.08	53.80	10 91	2.87	1.22	1.36

Stony Brook Water Supply.

We learn from a foregoing statement that our daily consumption of water during the past year has been 4,489,180 gallons, and from the Superintendent's report there appears to have been a daily average overflow at the Stony Brook dam of 23,835,068 gollons, or a total amount of about 8,700,000,000 gallons, which so far as our supply is concerned, run to waste. Thus the amount running over the dam after supplying all of our consumption, was equal to more than five times the amount we used. We must remember that this result follows three seasons, when the rainfall has in each case exceeded the average for this part of the country, and we cannot expect a continuance for many years of such a large amount of water running to waste over the dam.

Arrangements were made with Waltham and Weston, by which a part of the water stored in the Stony Brook Basin could be used up to the first of October; that is, allowing us to draw water from there when the natural flow of water in the

brook ceased to flow over the dam. In the future this will at times be of great convenience to our city without doing any harm to either Waltham or Weston.

Land Around Fresh Pond.

During the year past a settlement has been made on an amicable basis with the Sisters of St. Joseph, by which the city will come into full possession of the premises in February, 1892, or sooner if the Sisters get their new building completed, which they are erecting in the Allston district of Boston.

A settlement has also been made with the Fresh Pond Ice Company for their property, upon the award of the Commissioners, to whom the matter was referred. In the final settlement the company are permitted to cut ice the coming winter, and may remain in possession of their ice-houses during the year 1891, if they choose to do so upon the terms agreed upon, the Water Board reserving the right, after the ice-cutting season is over, to remove all incumbrances on the shore of the pond to a sufficient width to complete the driveway in front of the ice buildings and properly riprap the shore.

All but three of the takings around the pond are now settled, viz.: The Boston Ice Company, Dr. Somers' land, and the estate of Mr. Smith.

The Board, in addition to what the city had the right to take, have purchased of Mr. Artemus White about thirteen acres of land in Belmont, being the balance of the Bright estate, so called. This purchase completes all the land we need to protect Fresh Pond Reservoir, and will furnish all the material we need for grading, by filling the low places around the borders of the reservoir, and besides gives us the important boundary on a public street or way completely around the land bought or taken near Fresh Pond.

Work Done Around Fresh Pond Reservoir.

The work of filling the low lands around the reservoir has been steadily carried on during the season; a part of Black's Nook was filled early in the year, and since then about seven acres on the southwesterly side of the reservoir, near Cushing Street, have been filled and graded, and next spring will be covered with loam and sown down to grass, after which a beautiful

green lawn will take the place of the swampy land and stagnant pools of water which have so long made the place unsightly and threatened the purity of our water supply.

Fresh Pond Drive.

The driveway around the borders of the pond, so far as it is built, has been kept in good condition, and is becoming more and better known and popular as a resort for pleasure driving and walking. We hope, if the necessary appropriation is granted, that we may do much towards completing it around the pond the coming year, so that we may satisfactorily answer the question often put to us: "When are you going to complete the driveway around the pond?" We would again remind you that the stench from the Niles slaughtering house is a serious drawback to the pleasure of driving around the pond, and in our opinion the City Council should adopt some measures to abate this nuisance.

Work at the Engine House.

The building has been repaired where needed and the woodwork painted. The changes in one of our pumps from a 5,000,000 gallon to a 10,000,000 one has been completed and works satisfactorily, so that now we have two 10,000,000 gallon pumps in excellent order to do our work. Our small high-service pump has continued to do its work so far satisfactorily, but some changes in it will need to be done the ensuing year. For the particulars about it, we would refer you to the Engineer's Report herewith submitted to you.

Our Feeding Reservoir.

The work done last year in driving piles around those parts where weakness had been observed seems to have remedied the trouble, as no signs of leaking have been seen during the past year. The work of relaying the wall of this reservoir on the west side was begun in September and has been continued until now, when, on account of winter coming on, we were obliged to defer finishing it until next spring. We found the old wall in a very poor condition and entirely unfit for such a place. In the new wall we have gone to the foundation, and laid up a strong wall that will safely stand as long as it is needed. On the north end the earth bank has been extended out over the old wall, and

thus made secure. There had been so many complaints in some parts of the city of lack of head in their water supply, that we have made an arrangement in connection with the stand pipe, so that the head is increased during pumping hours by the addition of fourteen feet, which we think will remove all cause of complaint.

Drain on the West Side of the Reservoir.

The water on the meadows has continued so high that we have not been able to put it in this year; but the City Council, through the Sewer Department, having lowered the channel of Alewife Brook, both at Charlestown Turnpike and at North Avenue, we think now after the brook is dredged out the water will recede from the meadows so that we can do the work the coming season.

Work to be Done.

First. Continue the work of filling the low swampy land around the borders of Fresh Pond Reservoir, so as to displace the bodies of dead and stagnant waters that constantly menace the purity of our water supply in the reservoir, and present an unsightly and repugnant appearance to all who walk or ride around the borders of our principal storage reservoir.

Second. Finish the wall around the corner of the feeding reservoir, which has been begun this year, and build the chronograph house at the stand-pipe which we can keep warm in the winter, and ascertain automatically the amount of consumption in the night, which is our best means of detecting large leaks or waste of water.

Third. Construct the drain on the southerly side of the pond, which we have been waiting so long for, and have not built because of the high water on the meadows. We hope now that the Sewer Department have lowered the bed of Alewife Brook under the street bridges; we trust this work will be continued by dredging out the channel of the brook, so that the water can run off, after which we can put in our drain, which we very much need, to prevent foul water from running into the storage reservoir.

Fourth. Our high service pump, by the report of our Pumping Engineer, will need overhauling the present year. The demand for high service is increasing so fast with the erection of

high buildings, and building on high ground, that at no distant day an engine of larger capacity than our present one will have to be procured for the high service work. Wherever this service has been introduced it has given great satisfaction.

Fifth. Our driveway, opposite Tudor Park, is quite narrow, and ought to be widened. We have had a conference with the Fitchburg Railroad Engineer, and a plan has been submitted to us by them, showing how they could move their tracks and location towards Lake View Avenue, thus giving us a wider driveway, by giving them a piece of Tudor Park. We think this change desirable for the city, and recommend that we be authorized to carry it out on the part of the city.

Sixth. Continue the construction of the driveway, opposite the ice-houses as soon as our agreement with the Fresh Pond Ice Company will permit, and after we come into full possession of the property of the Boston Ice Company; the former as soon as the ice-houses are filled with ice, and the latter in the month of June next.

Seventh. Some provision should be made for a house for our Assistant Engineer, near our pumping station; and we would recommend moving one of the houses on Concord Avenue, belonging to the city, to a place near the station, and fit the same up for that purpose.

Recommendations.

First. We recommend that the City Council commence at as early day as is practicable and dredge out Alewife Brook, to relieve the meadows from the high water thereon — a work that should have been done long ago.

Second. We think the time has come when a reduction can be safely made in our water rates for domestic and other purposes, except for water sold by meter. As a reduction on metered water was made this year, we do not recommend any change in the rates for metered water at this time. In regard to water used for domestic and other purposes, except as above, we would recommend that a discount of ten per cent. be made on all such bills as are paid during the month of May, the same being due on May 1 each year. This plan of reduction has the advantage of treating all water-takers exactly alike, without establishing a new schedule of water rates, — our present

schedule being as equitable as any new one that could be made, — and the further advantage that in the future when another reduction might be found practicable, a larger percentage could be deducted from the bills. Another advantage would be that the larger part of the water rates would be paid in early in the season, to secure the reduction, and the city have the money to use when needed most.

Remarks.

For detailed statements of what has been done and the present condition of our water works, we would refer you to the reports of the Superintendent, Registrar and the Engineer at the pumping station, made to us, which we herewith submit to you as a part of our report to you.

We cheerfully attest to the untiring industry of our Superintendent, the faithfulness of our Registrar, and the good service of all acting under them. Our City Solicitor has had much to do with the matters connected with the settlement of our cases for damages for land takings and land purchases. Several in his charge have been satisfactorily settled during the past year, and we hope the time is not distant when all cases of this kind will be disposed of.

We congratulate the city on the excellent condition of this part of the city property, and the good showing that our water works make when compared with others any way similar to our own.

All of which is respectfully submitted,

C. W. KINGSLEY,
JAS. M. W. HALL,
JOHN F. O'BRIEN,
GEO. H. HOWARD,
L. M. HANNUM,
} *Cambridge Water Board.*

REPORT

OF THE

WATER REGISTRAR.

WATER REGISTRAR'S OFFICE,
CAMBRIDGE, Dec. 4, 1890.

To the Cambridge Water Board : —

IN compliance with the requirements of the City Ordinance, I present the twenty-sixth annual report of the operations of this department, showing the receipts, expenditures and abatements, together with a statement of the number of water takers, etc., for the year ending Nov. 30, 1890.

Amount of bills remaining unpaid Nov. 30, 1889 : —

Water rates	$559 45
Meter rates	202 15
Supplies and repairs	1,275 19
Rent	177 50

Amount of bills placed in hands of City Treasurer for collection from Nov. 30, 1889, to Nov. 30, 1890 : —

Water rates	$288,731 48	
Water rates	48,746 29	
Supplies and repairs	7,056 15	
Off and on water, rents, seals and fines	778 39	
		$247,526 60

There have been collected : —

Water rates	$233,318 92
Off and on water, rents, seals and fines	891 39
Supplies and repairs	6,592 38
Amount carried forward	$240,802 69

Amount brought forward.	$240,802 69	
There have been abated: —		
Water rates	$4,533 40	
Supplies and repairs	20 99	
There remain unpaid: —		
Water rates	$278 85	
Meter rates	160 70	
Supplies and repairs	1,717 97	
Off and on $9.00, and seals $3.00	12 00	
		$247,526 60

Expenditures.

Construction account (Stony Brook)		$11,707 70	
Construction account (Fresh Pond land purchase) .		198,706 89	
Construction account (general)		46,987 15	
Maintenance account, viz.: —			
Care and repairs	$23,484 02		
Pumping service	12,272 73		
Office expenses	4,280 95		
		$40,037 70	
Supply and repair account		5,625 24	
			$303,064 68

Abatements.

Water rate bills to the amount of	$4,533 40	
Supply and repair bills to the amount of	20 99	
		$4,554 39

Refunds.

Water rates to the amount of	$2,201 30	
Which amount deducted from the receipts	233,317 92	
Leaves net receipts for water	$231,116 62	
Add on and off water, rent, seals and fines . . .	892 39	
Makes net receipts of "Rates, fines, etc.."		$232,009 01

Off and On.

Water has been shut off for non-payment of rates or per order on account of vacancy, and seals have been applied to fixtures by request of owners or occupants as follows: —

Supplies shut off in 1890	423
Supplies let on, shut off in 1890	322
Supplies let on, shut off in previous years	75
New supplies let on	393
Seal locks applied to fixtures in 1890	677
Seal locks removed, put on in 1890	309
Seal locks removed, put on in previous years	219

Comparative Statement.

	1889.		1890.	
Construction Acc't (Stony Brook).				
RECEIVED.				
From bonds issued (par value), additional appropriation by City Council	$20,000 00			
From premium on bonds	1,973 66			
Balance of appropriation	15,403 23	$37,376 89	$11,346 50	$11,346 50
EXPENDED.				
Sundry bills	$26,030 39		$11,707 70	
Balance of appropriation	11,346 50			
Deduct balance due City of Cambridge		$37,376 89	$361 20	$11,346 50
Construction Acc't (Fresh Pond Land Purchase).				
RECEIVED.				
Balance of appropriation	$1,268 78		$727 97	
From bonds issued			200,000 00	
From premium on bonds			12,120 25	
From sale of houses and apples	645 00			
Transferred from maintenance account by order of City Council	1,500 25	$3,414 03		$212,848 22
EXPENDED.				
Purchase of sundry estates	$2,686 06		$198,706 89	
Balance of appropriation	727 97	$3,414 03	14,141 33	$212,848 22
Construction Acc't (General).				
RECEIVED.				
From excess of receipts from "Rates, fines, etc."	$41,237 23		$46,917 51	
Sale of Follansbee pump, and pulley, shafting, etc	100 00		69 64	
From Harvard College (extension of main pipe to Holmes field)	499 41	$41,836 64		$46,987 15
EXPENDED.				
Sundry bills		$41,836 64		$46,987 15
Maintenance Account.				
RECEIVED.				
Accrued interest on water bonds	$298 00		$627 77	
Sale of engine, hay, etc	567 00		436 68	
From "Rates, fines, etc."	221,869 70	$222,734 70	232,009 01	$233,073 46
EXPENDED.				
Care and repairs	$42,603 20		$40,037 70	
Interest on water debt	84,735 00		82,195 00	
Paid to Sinking Fund Commissioners	51,705 00		48,945 00	
Transferred to Fresh Pond land purchase account by order of City Council	1,500 25	$180,543 45		$171,177 70
Excess of receipts		$42,191 25		$61,895 76
Supply Account.				
Received	$8,255 75		$6,592 38	
Expended	5,897 67		5,625 24	
Excess of receipts		$2,358 08		$967 14

1889.	Maintenance Account, excess of receipts	$42,191 25
	Supply Account, excess of receipts	2,358 08
	Excess of total receipts over total expenditures	$44,549 33
	Expended on Construction Account (general)	41,237 23
	Balance due Sinking Fund	$3312 10
1890.	Maintenance Account, excess of receipts	$61,895 76
	Supply Account, excess of receipts	967 14
	Excess of total receipts over total expenditures	$62,862 90
	Expended on Construction Account (general)	46,917 51
	Balance due Sinking Fund	$15,945 39

The excess of receipts for 1890, as shown in the above comparative statement, amounting to Fifteen thousand, nine hundred forty-five and $\frac{39}{100}$ dollars, has been carried to the Sinking Fund, as required by law.

Statement of the yearly revenue received from water rates since the purchase of the works by the city: —

| | | |

The above schedule of fixtures is exclusive of the school-houses, engine houses, police stations and other city buildings.

A careful house-to-house inspection of the service pipes and fixtures on the premises of the water-takers has been made, resulting in the repair of defective pipes and fixtures, and a consequent saving in water. The promptness with which leaks and imperfect fixtures are repaired, after notice is sent from this office, is worthy of special mention, as showing the desire of our citizens to comply with the requirements of the city ordinance, and prevent a waste of water.

The inspection of the various premises results in the discovery of numerous fixtures, etc., in addition to those already charged, for which water rate charges are immediately made.

Respectfully submitted,

WALTER H. HARDING,

Registrar.

REPORT

OF THE

COMMITTEE ON ACCOUNTS OF THE CAMBRIDGE WATER BOARD.

We have examined the abstract of accounts as presented to us by the Water Registrar, covering the records of the past year. We have compared it with the statements submitted to us by the City Treasurer and Auditor, and we find it to be correct. Annexed is the financial statement presented to us by the Water Registrar, and verified by us: —

Amount of bills in hands of City Treasurer, November 30, 1889: —		
For water rates and rent	$939 10	
For supplies and repairs	1,275 19	
		$2,214 29
Amount of bills delivered to the City Treasurer for collection during the year ending November 30, 1890: —		
For water rates	$188,731 48	
For meter rates	48,746 29	
For supplies and repairs	7,056 15	
For off and on, rent and seals	778 39	
		$245,312 31
Total bills		$247,526 60
There have been collected	$240,802 69	
There have been abated	4,554 39	
Balance uncollected, Nov. 30, 1890, water rates	439 55	
Balance uncollected, Nov. 30, 1890, supplies and repairs	1,717 97	
Balance uncollected, Nov. 30, 1890, off and on and seals	12 00	
		$247,526 60

Total collections on rates, fines, etc., and supply and repair accounts	$240,802 69	
Less refunded	2,201 30	
Net collections		$238,601 39

JAS. M. W. HALL,
HENRY H. GILMORE,
Committee on Accounts.

CAMBRIDGE, Dec. 1, 1890.

CITY OF CAMBRIDGE,
OFFICE OF CITY TREASURER,
December 1, 1890.

To the Cambridge Water Board:—

GENTLEMEN: I give you herewith a record of the transactions between the Water office and the City Treasurer's office during the year ending November 30, 1890: —

Gross collections for account of "Water works, rates, fines, etc."	$238,743 71
Abatement certificates received and allowed on water rates	4,533 40
Gross collections for account of "Water works supply account"	6,613 37
Abatement certificates received and allowed on "Supply account"	20 99
"Refund checks" have been received and paid to the amount of	2,201 30
The *uncollected bills* in my hands November 30, 1890, for account of "Water rates" amount to	451 55
The *uncollected bills* in my hands November 30, 1890, for account of "Supplies" amount to	1,717 97

Respectfully,

WM. W. DALLINGER,
City Treasurer.

OFFICE OF CITY AUDITOR, CITY HALL,
CAMBRIDGE, December 1, 1890.

To the Committee on Accounts of the Cambridge Water Board:—

GENTLEMEN: In accordance with your request, I herewith present a statement from my books for the year ending November 29, 1890.

WATER WORKS (RATES, FINES, ETC.)

Amount of uncollected bills in City Treasurer's hands Dec. 1, 1889		$939 10
Amount of bills placed in City Treasurer's hands for collection		238,256 16
Total		$239,195 26
Amount collected by City Treasurer		238,743 71
Balance uncollected		$451 55
Amount of abatements allowed by City Treasurer	$4,533 40	
Amount of refunds paid by City Treasurer	2,201 30	

WATER WORKS (SUPPLIES).

Amount of uncollected bills in City Treasurer's hands, Dec. 1, 1889		$1,275 19
Amount of bills placed in City Treasurer's hands for collection		7,056 15
Total		$8,331 34
Amount collected by City Treasurer		6,613 37
Balance uncollected		$1,717 97

Amount of abatements allowed by City Treasurer, $20.99.

Respectfully submitted,

HARRY T. UPHAM,
Auditor.

ANNUAL STATEMENT OF THE WATER REGISTRAR TO THE COMMITTEE ON ACCOUNTS, DECEMBER 1, 1890.

Water rates unpaid Nov. 30, 1889		$761 60	
Rent unpaid Nov. 30, 1889		177 50	
Bills placed in hands of City Treasurer from Dec. 1, 1889, to Dec. 1, 1890:—			
Water rates from annual ledgers	$178,054 20		
Water rates from fractional ledgers	10,677 28		
Water rates from meter ledgers	48,746 29		
Off and on water	428 25		
Rent	255 04		
Seals	95 10		
		238,256 16	
Total bills on "Rates, fines, etc."		$239,195 26	
Supply and repair bills unpaid Nov. 30, 1889	$1,275 19		
Supply and repair bills placed in hands of the City Treasurer for collection from Nov. 30, 1889, to Nov. 30, 1890	7,056 15		
		8,331 34	
Total bills			$247,526 60

There has been collected, annual ledgers	$175,353 68		
There has been collected, fractional ledger	9,287 25		
There has been collected, meter ledger	48,677 99		
There has been collected, off and on water	419 25		
There has been collected, rent	380 04		
There has been collected, seals,	92 10		
Total collections on "Rates, fines," etc.		$234,210 31	
Collections on supply and repair account		6,592 38	
Total collections		$240,802 69	
There have been abated, water rates	$4,533 40		
There have been abated, supplies and repairs	20 99		
There remain uncollected, water rates	439 55		
There remain uncollected, supplies and repairs	1,717 97		
There remain uncollected, off and on	9 00		
There remain uncollected, seals	3 00		
		$6,723 91	
			$247,526 60
Total bills for collection		$247,526 60	
Less abated	$4,554 39		
Less refunded	2,201 30		
Less unpaid	2,169 52		
		8,925 21	
Net receipts			$238,601 39

Attest:

WALTER H. HARDING,
Registrar.

REPORT

OF THE

SUPERINTENDENT OF THE WATER WORKS.

CAMBRIDGE, November 30, 1890.

To the President and Members of the Cambridge Water Board :—

GENTLEMEN : The annual report of your Superintendent upon the condition of the works and the operations of the past year is herein presented.

The total amount of water pumped was 1,638,550,512 gallons.

Coal consumed per million gallons pumped, $1{,}527\frac{38}{100}$ pounds.

Water sold by meter and that used for watering streets and for fountains, 421,488,500 gallons; leaving the amount for domestic use 1,217,062,012 gallons.

Number of gallons daily for each inhabitant on the whole amount pumped, $62\frac{35}{100}$.

Number of gallons daily for each inhabitant on amount for domestic use, $46\frac{8}{100}$.

Fresh Pond and Surroundings.

The average height of the water in the receiving basin has been 15.49. It reached its highest point April 10 and 11, viz.: 16.74, and its lowest point July 27, 13.69, when the 30-in. gate was opened, letting the full capacity of the Stony Brook supply into the basin. The gate remained open until Stony Brook basin was drawn down 9.34 ft., when it was shut, and the fountain used, supplied through the 8-in. by-pass, a sufficient quantity being thus obtained to keep the basin full to the present time.

The rain-fall has been 53.80 inches.

The riprapping of the shores of the reservoir is in good condition, and but slight repairs have been needed.

The fence should be repainted the coming season.

The roadway has been kept clean and properly graded and is now in good condition.

The filling in of Black's Nook was commenced early in March and continued until the ground became thoroughly settled, when grading of the low territory covered with water on the west side of the basin bordering Cushing and Grove sts. was commenced and continued nearly through the entire season. Seven acres have been filled to an average grade of 18.00. This work is of consequence, as it cuts off all objectionable filtration and obliterates a very unsightly locality.

The grove west of the fountain has been greatly improved by grading and by pruning and thinning out trees.

The bank on the south end of Kingsley Park has been graded down, connecting the park to Fresh Pond Grove. The grading of the banks around this grove should be continued and completed the coming year, that they may grass over to prevent dirt and gravel from washing into the driveway.

The grass of Kingsley Park, Tudor Park, two small parks on Concord ave., engine house lot and the park west of the Fresh Pond Ice Co. stable was sold standing. The hay from the Somer's estate and banks has been stored in the stables at pipe yard and Concord ave. and at Black and Gay barns.

The house and stable on Concord ave. are in good repair. The Black house has been vacant since September. The Smith house on Concord ave. was let November 28.

Pumping Works.

The copper gutters on engine house and coal shed and the roof balustrade have been thoroughly repaired and the buildings painted two coats. No repairs are anticipated the coming season. The machinery is in good condition except the high-service pump, which the engineer reports must be attended to this year. The grounds and walks of the engine house lot and Tudor Park have received necessary care. A much-needed drain has been laid, connecting all roof conductors with the sewer.

Reservoirs.

The work of rebuilding with granite the retaining wall north of the stand-pipe was commenced September 1, and at this date about two-thirds of the wall is completed. The reservoir lot has

been extended northerly 20 ft. by purchase from F. A. Kennedy, and the wall-capping being removed, the banks have been carried down over the wall and to within twenty feet of Reservoir st., the new wall to return that distance on the north end. Work will be suspended about December 10 until spring opens.

A new overflow has been attached to the stand-pipe, adding 14 ft. to the pressure while pumping.

No leakage from the reservoir has appeared since the repairs last year.

High Service.

This service continues to give perfect satisfaction. Extensions the past year have been the following: Main pipe, Vassal lane, Appleton st. west, 220 ft. 6-in. pipe; Appleton st., Vassal lane north, 271 ft. 6-in. pipe; Richdale ave., west of Lambert ave. west, 266 ft. 6-in. pipe. These amounts do not include pipe for the hydrants. Check-valves, Parker and Buckingham sts., one 4-in. check-valve; Appleton st., 218 ft. north of Vassal lane, one 6-in. check-valve; Madison st. and Concord ave., one 4-in. check-valve; Dublin st., 276 ft. south of Wicklow st., one 6-in. check-valve.

The territory added is trivial, nor does the elevation necessitate high-service supply; but these connections were most convenient and inexpensive.

Stony Brook.

The daily average number of gallons for the month flowing over the waste-way was the following: —

December,	1889	43,266,285	gals.	June,	1890	14,125,813	gals.
January,	1890	19,792,807	"	July,	"	720,760	"
February,	"	21,871,053	"	August,	"		
March,	"	66,381,508	"	September,	"	1,235,842	"
April,	"	35,635,454	"	October,	"	31,690,959	"
May,	"	28,324,352	"	November,	"	22,068,051	"

Daily amount wasted for the year, 23,835,068 gallons. Water ceased flowing July 11, 19, 20, 30, 31, all the month of August and the first 23 days of September.

A thin crest has been placed on the over-fall, making the grade 81.00 for full basin. This crest was made of 3-in. angle iron and thoroughly bolted to the granite.

The offer of the town of Weston to build a retaining wall where necessary, and to widen and straighten the entire length of the city line on Summer st., for the ceding of a small strip of land and an old wall, was accepted, and the desired change has been made by the town. A substantial fence has since been built and painted, greatly adding to the completeness of the works in that locality.

The banks on the east end of the dam should be completed and fenced the coming year.

In place of the former employé, Silas Baxter was put in charge of the grounds October 1, and a visit to the works will show the wisdom of the change in the general tidy and improved appearance of the walks and surroundings.

The dwelling-house has been painted, papered and whitewashed throughout. No other repairs have been made except on the screens in the gate-house where the wire became detached from the frames.

Stony Brook Pipe Line.

There have been three leaks on this line, viz.: One from a split pipe in Watertown near Gilkey's lumber yard, one at a joint near Arlington st., Watertown, and another near Mt. Auburn bridge, Watertown.

Pipe Yard.

The buildings at the pipe yard have been painted, and are now in thorough repair.

Brookline Street Pipe Bridge.

The house over the pipe will need repairs soon, as the bottom of the uprights is becoming decayed. About half of the sheathing on the under side of the stringers has dropped off, but need not be renewed, as it has no connection with the flooring of the bridge, which is in good condition.

The syphon has been pumped out.

Sixth Street Syphon.

A much needed connection has been made across Broad Canal at Sixth st. by a 12-in. main from the 20-in. main on Broadway to the Potter st. main. At the Canal the pipe is 3 ft. below low water, and the uprights of the syphon are enclosed in a box

2 ft. 6 in. square of 6-in. hard pine timber driven solid with a pile-driver. This casing extends through each side wall and the space around the pipe was filled with hot tar and gravel, making a very thorough and substantial job. Quicksand was encountered at the bottom of the Canal, which increased the difficulty of the work.

Low Service Force Mains

When pump No. 2 was first in commission this year it labored under the disadvantage of discharging only through the 24-in. main. A connection in front of the engine house, from the 24-in. to the 30-in. main, by a short piece of 24-in. pipe, two special castings, with gate, was made, which enables either pump to deliver into both mains and secures higher duty for both.

The Engineer's report, statements in detail of main pipe laid and supplies, gates and hydrants set, locations of fountains, stand-pipes, street reservoirs, check-valves and meters, with inventory of stock and tools, accompany this report.

All of which is respectfully submitted.

HIRAM NEVONS,
Superintendent.

Main Pipe.

Main pipes have been laid in the following streets: 323 ft. of 8-in. in Albany st., from Front st., north; 271 ft. of 6-in. in Appleton st.; 164 ft. of 2-in. in Ashburton Pl. (renewal); 3 ft. of 1½-in. and 322 ft. of 4-in. in Bartlett st.; 3 ft. of 1½-in. and 127 ft. of 8-in. in Bent st.; 115 ft. of 6-in. in Binney st.; 150 ft. of 6-in. in Blake st.; 23 ft. of 6-in. in Blanche st., from Front st.; 83½ ft. of 4-in. in Blight ct.; 490 ft. of 6-in. and 343 ft. of 6-in. (renewal) in Boylston st.; 2 ft. of 3-in. in Brewer st. at Mt. Auburn st.; 181 ft. of 6-in. and 217 ft. of 6-in. (renewal) in Charles st.; 86 ft. of 6-in. in Clay st.; 54 ft. of 4-in. in Columbia st. (Somerville); 3 ft. of 1½-in. and 122 ft. of 4-in. in Davenport st.; 236 ft. of 4-in. in Dickinson st.; 332 ft. of 6-in. in Dublin st.; 230 ft. of 4-in. in Dyke st. (renewal); 181 ft. of 4-in. in Elm st.; 108 ft. of 6-in. and 1170 ft. of 12-in. in Front st.; 60 ft. of 4-in. in Frost st.; 3 ft. of 1½-in. and 61 ft. of 6-in. in Garden st.; 2 ft. of 4-in. and 146½ ft. of 6-in.

in George st.; 2 ft. of 3-in. in Gerry st. at Mt. Auburn st.; 163 ft. of 4-in. in Glenwood ave.; 375 ft. of 6-in. in Gorham st.; 48 ft. of 4-in. in Granite st.; 180 ft. of 4-in. in Griggs st.; 35½ ft. of 2-in. in Griggs st. ct.; 36 ft. of 4-in. in Harrison st.; 31½ ft. of 1¼-in. in Harvard pl.; 9 ft. of 1½-in. in Harvard st. for blow-offs; 60 ft. of 4 in. in Hayes st.; 184 ft. of 4-in. in Healey st.; 165½ ft. of 4-in. Howland St.; 150 ft. of 4-in. in Jay st.; 2 ft. of 4-in. in Kinnaird st.; 18 ft. of 12-in. and 4 ft. of 24-in. in Lake View ave.; 3 ft. of 1½-in. and 81 ft. of 6-in. in Lexington ave.; 137 ft. of 4-in. in Line st.; 103½ ft. of 2-in. in Linwood pl.; 198 ft. of 6-in. in Locke st.; 4½ ft. of 2-in. in Mason st.; 606 ft. of 6-in. in McDonald st.; 373 ft. of 6-in. in Murray st.; 24 ft. of 4 in. in Norfolk st.; 46 ft. of 4-in. in Orchard st.; 242 ft. of 4-in. and 6 ft. of 6-in. in Parker st.; 3 ft. of 6-in. and 116 ft. of 8-in. (renewal) in Potter st.; 239 ft. of 4-in. and 195 ft. of 6-in. in Prospect st. (renewal); 145½ ft. of 6-in. and 2 ft. of 8-in. in Raymond st.; 273 ft. of 6-in. in Richdale ave.; 51. ft of 4-in. in Second st.; 830½ ft. of 6-in. and 785½ ft. of 12-in., of which 91 ft. were laid at Broad Canal for syphon in Sixth st.; 45 ft. of 4-in. in South st. (Somerville); 135 ft. of 4-in. in Springfield st.; 3 ft. of 1½-in. and 230 ft. of 6-in. in Vassal lane; 70 ft. of 6-in. in Village st.; 425 ft. of 4-in. in Ware st. (renewal); 239 ft. of 4-in. and 48 ft. of 6-in. in Wendell st.; 118 ft. of 6-in. in Wicklow st.; 3 ft. of 1½-in., 621 ft. of 4-in. and 6 ft. of 6-in. in Willis ct.; 30½ ft. of 4-in. in Woodlawn ave.; and 128 ft. of 6-in. in Worthington st.

The stock used in connecting the 30-in. main and the 24-in. main in front of the engine house was as follows: One 24-in. gate; one 30x24 in. bend and reducer; one 24-in. bend; one 24-in. sleeve; 4 ft. of 24-in. pipe; 2 chains and irons to fasten gates; one wooden box; 300 lbs. of lead, and 8 lbs. of packing.

The 12-in. high service main at this place was offset down to allow connection to be made by a special casting, made to order.

To accommodate new sewers, the main pipes in Columbia and Austin sts. and in Washington and Clark sts. have been offset, the supplies in Harding and South sts. have been raised, and the location of supplies in Eliot st. has been changed.

The pipe in Woodlawn ave. sunken by the new sewer has been raised.

Hydrants and boxes have been raised in Bridge st. and loca-

tion of hydrant changed in De Wolf st. for the accommodation of the street department.

New Supplies.

Three hundred and ninety-six new supplies have been laid, making a total of 10,554. Thirty-two have been renewed, of which six were enlarged. Fifteen have been furnished with sidewalk shut-offs.

Supplies in the following streets have been connected to the new mains: Ashburton pl., Boylston st., Charles st., Dyke st., Front st., Prospect st. and Ware st.

Supplies in Franklin st. have been transferred from the 3-in. to the 4-in. main pipe, and in Austin st. from the 4-in. to the 6-in. main pipe. In both cases the old pipes have been abandoned.

Leakage.

Three hundred and forty-one leaks have been stopped, namely: One on 2-in. main, two on 3-in. main, five on 4-in. main, four on 6-in. main, two on 8-in. main, one on 10-in. main (cement), one on 20-in. main, three on 30-in. main in Watertown, thirty-eight on supplies in street, two hundred and eighty-three on premises and one on a hydrant.

Of these, two hundred and seventy-three were reported by inspectors while canvassing and were repaired by owner or occupant.

A general inspection of pipe and fixtures has been made by inspectors.

Drinking Fountains.

No addition to the drinking fountains has been made during the year. The number at this date is sixteen.

Standpipes for Street Watering.

There has been no addition made to the number of standpipes. The one located at the corner of North ave. and Sacramento st. has been moved to North ave., opposite Hudson st. On account of lack of pressure at the corner of Harvard and Prescott sts., the standpipe formerly located at this place has been transferred to the corner of Bow and Main sts. The standpipe on Garden st., near Chauncy st., has been relocated on Waterhouse st.

Gates.

All the gates have been inspected and put in good condition.

Boxes.

Seven hydrant, twenty-six iron and thirty-three wooden boxes have been set in place of worthless ones removed, making a total of 66.

Check-Valves.

Four new check-valves have been placed on the extensions of high service, namely: One 4-in. in Parker and Buckingham sts., one 4-in. at Madison and Concord avenues, one 6-in. in Dublin st. and one 6-in. in Appleton st.

Hydrants.

Fifteen hydrants of the Chapman Valve Company's make have been added during the year, making the number now in use 663.

Old flush hydrants located at Church st. opposite Palmer st., at the corner of Washington and Clark sts. and on Pacific st. have been removed and new flush hydrants have been set in their places. Flush hydrants also have been removed from Tremont st. near Carlisle st., and from Bridge st. at the corner of Prison Point st. and new Chapman post hydrants set at these locations. The Perkins post hydrant located at the corner of Cambridge and Third sts., broken by a runaway team, has been replaced by a Chapman post. The post hydrants on Franklin st. opposite Soden st., and Gore st. between Fourth and Fifth sts., have been removed and Chapman posts set at these locations.

The following hydrants are located on private premises : —

Location.	Post.	Flush.
American Rubber Company	1	
Boston and Maine Railroad	3	4
Boston Rubber Works	1	
Boston Woven Hose Company	1	
Houghton & Company	2	2
Mt. Auburn Corporation		1
North & Company	1	
Page, George G. & Company	1	
Street Department, Tremont Street	1	
West End Street Railway Company	1	

Street Reservoirs.

The number of street reservoirs now in use is eight.

Meters.

The number of meters in use at this date is two hundred and fifty-four.

List of Meters in Use November 30, 1890.

METERS.	LOCATION.	SIZE INCH.	KIND.
Alghieri, Simon	Main st	¾	Worthington.
Allen & Endicott Building Co	Main st	¾	Crown.
American Rubber Co	Ninth st	4	Union.
" " "	Clark st	¾	"
American Net and Twine Co	Third st	2	Worthington.
Andrews, D. H	Ninth st	1½	Union.
Andrews, Dr. R. R.	Harvard st	⅝	"
Babb & Co., A	Columbia st	1	Worthington.
Barbour, W. O	Osborn st	1	"
" "	Osborn st	⅝	"
Bay State Brick Co	Spruce st	1	"
Beiermeister, Henry, laundry	Binney st	1	"
Bird, H. M	Broadway	⅝	Union.
Blake, Geo. F., Mnf'g Co	Binney st	2	"
" " " "	Third st	2	Crown.
" " " "	Third st	¾	Worthington.
" " " "	Third st	2	Hersey.
Blake, Irving	Church st	1	Worthington.
" "	Church st	1	Crown
B. & M ain R.R., Car house	Prison Point st	2	Worthington.
" " Filling locos	Prison Point st	6	Union.
" " Hoisting engs	Prison Point st	1	Crown.
" " Paint house	Prison Point st	1	Worthington.
" " Repair shop	Bridge st	2	"
" " Round house	Prison Point st	2	"
" " " "	Prison Point st	3	Frost.
" " " " (new)	Prison Point st	3	Union.
Boston Ice Co	Prison Point st	2	"
Boston Curling Club	Lexington ave	1	Worthington.
Boston Stamping Co	Third st	1¼	Union.
Boston Woven Hose Co	Hampshire st	4	Worthington.
Bowman, Henry	Frank st	1	"
Bragdon & Cooper	Frank st	⅝	"
Bullock, O. S.	Broadway	¾	"
Burton, A. & E.	Harvard st	¾	"
Cambridge Electric Light Co	Albro st	4	"
Cambridge Gas Light Co	Ash st	¾	"
" " "	Third st	1	"
" " "	Third st	2	"
Cambridgeport Diary Co	Blackstone st	1½	Union.
Cambridge Hospital	Mt. Auburn st	½	Crown.
Cambridge Y. M. C. Association	Main st	2	Worthington.
Campbell, Wm., & Co	Osborn st	2	"
Carr Brothers	Lopez st	1	"
Catholic Y. M. C. Association	Prospect st	⅝	"
City of Cambridge, fountain	Brattle and Craigie sts	¾	Thompson.
" " " "	Lechmere sq	⅝	Crown.
" " " "	North ave., at Igo's	¾	Terry.
Chadwick Lead Works	North st	1	Union.
Champlin, E. R	Main st	1	Crown.
Chelmsford Foundry Co	Bridge st	¾	Worthington.
Childs Acme Cutter and Press Co.	Main and Osborn sts	¾	Union.
Clarke, B. P. & Co	Main st	1½	Worthington.
Clarke Coffee Co	Reed st	1½	"
Close, George	Broadway	1	"
Cochran Chemical Co	Potter st	1	"
Cofran, N. M	Concord ave	1½	Union.
Coleman Bros	Broadway	1	Worthington.
Coolidge & Caswell	Franklin st	2	Union.
Coolidge, J. G., barn	Coolidge ave	2	Worthington.
" " greenhouse	Coolidge ave	1	"
Cushman Bros. & Co	Blanche st	¾	"
Dailey, C. W.	Cambridge st	1	"
Damon Safe and Iron Works	Main st	1	"
" " " "	Main st	2	Union.
Daniels, Badger & Co	Albany st	2	Crown.
Davenport, A. H.	Cambridge st	2	Worthington.
" "	Otis st	⅝	Crown.
Davis, Curtis & Co	Harvard st	1½	Worthington.
" "	Broadway	2	"
Davis, J. C. & Co	Broadway	2	Crown.
Day Cordage Co	Rogers st	2	"

List of Meters.—*Continued.*

NAME.	LOCATION.	SIZE INCH.	KIND.
Dee, C. W	Brattle st	2	Union.
Derby, H	Main st	1	"
Dolan, John	Decatur st	5/8	Crown.
Dover Stamping Company	Pleasant st	6	Union.
Dow, John C. & Co	Portland st	2	Crown.
" " "	Portland st	2	Worthington.
Downing, Theo	Eustis court	1	"
Doyle, W. E	Cambridge st	2	"
DeRosay, L. E	Dublin st	3/4	"
Dow, W. L. W	Deacon st	1	"
East Cambridge Club Stable	First st	1	"
Ellis, S. P., stable	Oxford st	3/4	"
Episcopal Theological Seminary	Brattle st	1 1/2	"
Fairbanks, Mrs. N. J., stable	Norfolk st	1	"
Farnsworth, T. H	North ave	1	"
Furfey, James	Brookline st	3/4	"
Gilmore & Eustis	Portland st	2	"
Goepper Bros	Ninth st	1 1/2	"
Goepper Bros	Spring st	2	"
Gwynne & Co	Brattle st	1	Crown.
Harvard College, Annex	Garden st	2	Frost.
" " Ath. Club House	Oxford st	2	Worthington.
" " Boat House	DeWolf st	1	Union.
" " Boat House (Weld)	Boylston st	2	Hersey.
" " Botanic Garden	Garden st	1	Crown.
" " Boylston Hall	College grounds	2	"
" " Gymnasium	Kirkland st	2	Union.
" " Gore Hall	College grounds	1	Worthington.
" " Holworthy Hall	College grounds	5/8	"
" " Hastings Hall	North ave	3	"
" " Holyoke building	Harvard st	2	"
" " Holmes Field	North ave	2	Union.
" " In yard	College grounds	1 1/2	Worthington.
" " Holmes Field	North ave	2	Union.
" " In yard	College grounds	1 1/2	Worthington.
" " Jeff'sn Phys Lab.	Holmes Field	1 1/2	Crown.
" " Jarvis Field	Everett st	1 1/2	Worthington.
" " " "	Everett st	5/8	"
" " Lawrence Sci. Sch.	Kirkland st	3/4	"
" " Law School	Holmes place	1	"
" " Agassiz Museum	Divinity ave	1	"
" " Add. Agassiz Mus.	Divinity ave	1 1/2	"
" " Memorial Hall	Cambridge st	2	"
" " Sever Hall	College grounds	3/4	"
" " Stoughton Hall	College grounds	3/4	"
" " Thayer Hall	College grounds	1 1/2	"
" " Tennis court	Oxford st	5/8	Union.
" " University Hall	College grounds	2	"
Harvard Piano Co	Main st	3/4	Worthington.
Hale, Aaron, stable	Elm st	3/4	Thompson.
Hannum, L. M.	Green st	1	Worthington.
Hawkins Machine Co	First st	1	"
Hazen, D. M	Elm st	1	"
Hewes, A. H. & Co	Crescent ave	1	"
Hersey, Ira G	Broadway	1 1/2	"
Hilton, J. M	Harvard st	1 1/2	"
Holt & Bugbee	East st	3/4	"
Holton, F. H. & Co	Harvard st	2	"
Horgan, J. H	Main st	1	"
Houghton, H. O. & Co	Blackstone st	5/8	Crown.
" " "	Blackstone st	2	Worthington.
Howe & Putney	Distillhouse st	2	Crown.
Ivers & Pond, No. 1	Main and Albany sts	2	Worthington.
" " No. 2	Albany st	2	Crown.
" " Engine room	Albany st	2	Union.
Irving & Casson	Otis st	1	Worthington.
Jones, C. L. & Co	Pearl st	3/4	Ball & Fitts.
Keeler & Co	Thorndike st	2	Union.
Kemp, L. & Son	Davis st	1	Worthington.
Kendall, Joshua, school	Appian Way	5/8	"
Kendall & Sons, Engine room	Main st	3/4	"
" " Machine shop	Main st	5/8	"
" " Boiler shop	Main st	1	"
Kennedy, F. A., Co., New bakery	Green st	1 1/2	"

List of Meters.—*Continued.*

NAME.	LOCATION.	SIZE. INCH.	KIND.
Kennedy, F. A., Co	Green st	3	Worthington.
" " "	Franklin st	1½	Union.
" " "	Elm st	1	Worthington.
Kennedy, Mrs. A	Farwell place	1	"
Lamb & Ritchie	Albany st	1	Crown.
Laminar Fibre Co	Tannery st	2	Union.
Little, Brown & Co	Blackstone st	¾	Thompson.
Lake & Moynahan	Mains t	¾	Crown.
Linehan, Charles	Bridge st	1	"
Mason & Hamlin Organ & PianoCo	Broadway	2	Union.
Mason, Mrs., Broadway House	Broadway	⅝	Crown.
Maverick Oil Works	Sixth st	2	Worthington.
Middlesex Co. House of Correction	Second st	2	"
" " " "	Spring st	4	Union.
" " Court House	Otis st	⅝	Worthington.
" " " "	Thorndike st	1	"
" " Registry of Deeds	Otis st	1½	"
Middlesex Bleachery & Dye W'ks	Sacramento st	1	"
Milan, Alex	Brattle St	⅝	Crown.
Miller & Shaw	Broadway	1	Worthington.
Miller & Sons	Gore st	¾	Frost.
Moring, estate of A. L	Main st	1	Worthington.
Morss & Whyte	Auburn st	4	Crown.
Moulton, C. W. H	Gore st	⅝	Worthington.
Mt. Auburn Corporat'n (Cemetery)	Mt. Auburn st	⅝	Desper.
" " " (Greenhouse)	Battle st	1	Worthington.
" " "	Coolidge ave	4	"
Murdock, Walter H	Griggs st	⅝	Ball & Fitts'.
National Linseed Oil Co	Fifth st	1	Worthington.
Norton, E. H	Distillhouse st	1	"
O'Brien, John F	Coolidge ave	¾	"
Orr, Rev. Wm	Arrow st	1	"
Page, Carlos & Co	Broadway	1½	Union.
Page, G. G. Box Co	Hampshire st	4	"
" " "	Hampshire st	2	Worthington.
Phillips, George S	Main st	¾	"
Place, Charles	Norfolk st	1½	"
Purcell, H	Main st	⅝	"
Rawson & Morrison	Main st	¾	Union.
Reardon, John Sons	Waverley st	4	Worthington.
Revere Sugar Refinery	Water st	3	Union.
" " "	Water st	3	"
Reversible Collar Co	Mt. Auburn st	1	Worthington.
Rideout, M. E	State st	1	"
Roberts Iron Works Co	Main st	1½	Crown.
Roberts, O. P	Brattle st	1	Worthington.
Rogers, heirs of George M	Washington st	3	"
Rutherford, R. J	First st	1	Crown.
Sands, M. W	Walden st	1	Worthington.
" " (south)	Dublin st	⅝	Crown.
" " (north)	Dublin st	¾	Balance Valve.
Saurman, B. F	Gore st	¾	Union.
Salvation Army	Prospect st	¾	Worthington.
Schaeffer Electric Light Co	Main st	¾	Union.
Schwartz, Henry	546 Main st	⅝	Worthington.
Shaw, A. B. & E. L	Otis st	¾	"
Shorey, George L	Kinnaird st	4	Union.
Smart, D. C	Main st	2	Worthington.
Spaulding Cable Works	Main st	⅝	Union.
Speare, S. Alden, Sons & Co	Rogers st	1½	Worthington.
Squire, John P. & Co	Gore st	1	"
" " "	Gore st	2	"
" " "	Gore st	4	Union.
" " "	Gore st	6	Gem.
Sortwell & Co	Distillhouse st	2	Worthington.
St. Mary's Church	Norfolk st	2	"
St. Peter's Catholic Church	Concord ave	2	Union.
Scully, John T	First st	¾	Crown.
Storr, D. C., Furniture Co	Thorndike st	¾	Worthington.
" " " "	First and Thorndikes st	⅝	Union.
Teele, Frank H	Lincoln court	¾	Worthington.
Thayer, Henry & Co	Broadway	2	"

List of Meters.—*Continued.*

NAME.	LOCATION.	SIZE. INCH.	KIND.
Tower, Sylvester & Son	Broadway	2	Worthington.
Tracy, M. F	Boylston st	1	Desper.
Underhill & Anderson	First st	1½	Worthington.
" " "	First and Thorndike sts	2	Union.
Union Glass Co	Webster ave	⅝	Worthington.
" "	Webster ave	¾	"
Union Pacific Tea Co	Main st	¾	Union.
Warren, J. H. (Felton Hall)	Cambridge st	1	Worthington.
West End St. R. Co. Car house	Cambridge st	¾	Balance Valve.
" " " "	Dunster st	¾	Worthington.
" " " New "	Murray st	1	"
" " " "El."	Murray st	1	"
" " " Elec. p'w'r pl't	North st	2	"
" " " Office	Harvard sq	¾	Crown.
" " " Paint Shop	Dunster st	1	Worthington.
" " " Repair shop	Dunster st	1	"
" " " Stable	Baldwin st	1	"
" " " "	Brookline st	1	"
" " " "	Cambridge st	1	"
" " " "	Cambridge st	1	"
" " " "	Dunster st	1	"
" " " "	Dunster st	¾	Hersey.
" " " "	Main st	2	Worthington.
" " " "	Mt. Auburn st	2	Crown.
" " " "	North ave	2	Worthington.
" " " "	Murray st	1½	"
" " " "	River st	1	"
" " " Washing cars	Murray st	1½	Crown.
" " " Waiting room	Bridge st	⅝	Worthington.
" " " " "	Main st	⅝	Ball & Fitts'.
Wight & Scorgie	Mt. Auburn st	⅝	Crown.
Wilcox, David	Davis st	2	Frost.
Wilkins, Wm	Earl st	⅝	Terry.
Wilson, John & Sons	Brattle st	¾	Frost.
Williams, H. A., Man'f'g Co	Otis st	⅝	Worthington.
Whitney, H. W.	Main st	⅝	Crown.
Woods, John	Bridge st	1½	Worthington.
Zerega, J. F	State st	⅝	"

List of Drinking Fountains, Nov. 30, 1890.

Brattle street, junction of Craigie street.
Brattle street, east side, at Brewer's block.
Bridge street, junction of Cambridge street.
Broadway, corner of Norfolk street.
Central square, east side.
Central square, west side.
Garden street, at Washington Elm.
Hampshire street, junction of Broadway.
Harvard square, at the flag-staff.
Inman square, east side.
Main street, junction of Broadway.
Main street, junction of Mt. Auburn street.
Mt. Auburn street, corner of Coolidge avenue.
North avenue, at Igo's.
North avenue, corner of Walden street.
Putnam avenue, corner of Brookline street.

List of Standpipes for Street Watering, Nov. 30. 1890.

Bow street, corner of Main street.
Brattle street, near University Press.
Brattle street, corner of Sparks street.
Brattle street, near Fayerweather street.
Brattle street, near Fresh Pond lane.
Bridge street, junction of Cambridge street.
Broadway, junction of Hampshire street.
Broadway, corner of Sixth street.
Broadway, near Third street.
Broadway, corner of Winsor street.
Brookline street, corner of Putnam avenue.
Cambridge and Baldwin streets.
Cambridge street, at Inman square.
Cambridge street, near Warren street.
Cambridge street, near Winsor street.
Columbia street, near Austin street.
Concord avenue, near Wyeth street.
Coolidge avenue, opposite entrance to Mount Auburn Cemetery.
Dana street, corner of Chatham street.

Fresh Pond avenue, opposite Vassal lane.
Gore street, west from Third street.
Green street, near Western avenue.
Inman street, near Broadway.
Kirkland street, near Quincy street.
Main street, near Hancock street.
Main street, near Portland street.
Magazine street, opposite Warland street.
Mount Auburn street, near Athens street.
Mount Auburn street, corner of Coolidge avenue.
Mount Auburn street, near Willard street.
North avenue, near the Common.
North avenue, near Beech street.
North avenue, near Roseland street.
North avenue, near Spruce street.
North avenue, corner of Norris street.
North avenue, opposite Hudson street.
North avenue, opposite Tannery street.
Prison Point street, opposite Round House.
River street, near Putnam avenue.
Sixth street, near Thorndike street.
Spruce street, corner of Cedar street.
Third street, near Rogers street.
Thorndike street, near Third street.
Walden street, corner of Mt. Pleasant street.
Washington avenue, near Lambert avenue.
Western avenue, corner of Howard street.
Waterhouse street, near the Common.

Main Pipe Laid, Number of Gates and Fire Hydrants.

Location.	Iron Pipe.		Gates.		Hydrants.	
	Length	Size.	No.	Size.	No.	Size.
	Feet.	Inch.		Inch.		Inch.
Albany from Front street	323	8	1	8	....	....
Appleton street	271	6	1	6	....	....
Ashburton place (renewal)	164	2	....	....	....	....
Bartlett street	3	1½	....	....	....	....
Bartlett street	322	4	1	4	....	....
Bent from Fifth street	127	8	1	8	....	....
Bent street	3	1½	....	....	....	....
Binney street	115	6	....	....	....	....
Blake street	150	6	1	6	1	6
Blanche and Front streets	23	6	1	6	1	6
Blight court	83½	4	1	4	....	....
Boylston street (renewal)	343	6	....	....	....	....
Boylston street	490	6	1	6	3	6
Brewer and Mt. Auburn streets	2	3	1	3	....	....
Charles and Fifth streets	2	6	1	6	....	....
Charles street	179	6	1	6	....	....
Charles street (renewal)	217	6	....	....	....	....
Clay street	86	6	....	....	....	....
Columbia street (Somerville)	54	4	....	....	..	....
Davenport street	3	1½	....	....	....	....
Davenport street	122	4	....	....	....	....
Dickinson street	236	4	2	4	....	....
Dublin street	332	6	....	....	1	6
Dyke street (renewal)	230	4	....	....	....	....
Elm street	181	4	1	4	....	....
Front from Sidney street	1170	12	1	12	....	....
Front and Village streets	4	6	1	6	....	....
Front and Winsor streets	104	6	I	6	....	....
Frost street	60	4	....	....	....	....
Garden street	61	6	....	....	....	....
Garden near Donnell street	3½	1½	....	....	....	....
George street	2	4	1	4	....	....
George street	146½	6	....	....	....	....
Gerry and Mt. Auburn streets	2	3	1	3	....	....
Glenwood avenue	163	4	1	4	....	....
Gorham street	375	6	2	6	....	....
Granite street	48	4	....	..	....	....
Griggs street	180	4	1	4	....	....
Griggs street court	35½	2	....	....	....	....
Harrison street	36	4	....	....	....	....
Harvard place	31½	1¼	....	....	....	....
Harvard street	9	1½	....	....	....	....
Hayes street	60	4	....	....	....	....
Healey street	184	4	1	4	....	....
Howland street	165½	4	1	4	....	....
Jay street	150	4	1	4	....	....
Kinnaird street	2	4	1	4	....	....
Lake View avenue	18	12	1	12	....	....
Lake View avenue	4	24	1	24	....	....
Lexington avenue	3	1½	....	....	....	....
Lexington avenue	81	6	....	....	....	....
Line street	137	4	1	4	....	....
Linwood place	103½	2	....	....	....	....

Main Pipe Laid Number of Gates and Fire Hydrants—*Continued.*

Location.	Iron Pipe.		Gates.		Hydrants.	
	Length	Size.	No.	Size.	No.	Size.
	Feet.	Inch.		Inch.		Inch.
Locke street	198	6	....	....	1	6
Mason street	4½	2	....	....	....	....
McDonald street	606	6	1	6	1	6
Murray street	373	6	2	6	....	....
Norfolk street	24	4	....	....	....	....
Orchard street	46	4	1	4	....	....
Parker street	242	4	....	....	....	....
Parker street	6	6	....	....	1	6
Potter street	3	6	1	6	....	....
Potter street (renewal)	116	8	1	8	....	....
Prospect street (renewal)	239	4	....	....	....	....
Prospect street (renewal)	195	6	....	....	....	....
Raymond and Walden streets	2	8	1	8	....	....
Raymond street	145½	6	1	6	....	....
Richdale avenue	273	6	....	....	1	6
Second street	51	4	....	....	....	....
Sixth street	830½	6	2	6	1	6
Sixth street	785½	12	3	12	1	6
South street (Somerville)	45	4	....	....	....	....
Springfield street	135	4	....	....	....	....
Vassal lane	3	1½	....	....	....	....
Vassal lane	230	6	1	6	1	6
Village street	70	6	1	6	....	....
Ware street (renewal	425	4	....	....	....	....
Wendell street	239	4	....	....	....	....
Wendell street	48	6	....	....	....	....
Wicklow street	118	6	....	....	....	....
Winsor and Front streets	....	....	....	....	1	6
Willis court	3½	1½	....	....	....	....
Willis court	621	4	1	4	....	....
Willis court	6	6	....	....	1	6
Woodlawn avenue	30½	4	....	....	....	....
Worthington street	128	6	1	6	....	....

Recapitulation.

	24 Inch.	12 Inch.	8 Inch.	6 Inch.	4 Inch.	3 Inch.	2 Inch.	1½ Inch.	1¼ Inch.	Total.
Length in ft. of iron pipe	4	1973½	452	5262½	3811½	4	143½	31	31½	11,713½
Length in ft. of iron pipe (renewals)			116	755	894		164			1,929
Number of gates	1	5	4	20	15	2				47
Number of hydrants				15						15

New Supplies.

	4 Inch.	3 Inch.	2 Inch.	1½ Inch.	1¼ Inch.	1 Inch.	¾ Inch.	Total.
Length in feet of pipe	219	3	947	267	1087½	1963	11,037½	15,525
Number of supplies	4		19	6	17	52	298	396
Number of stop and waste valves			18	6	22	51	304	401
Number of screw cocks			18	6	23	54	297	398
Number of sidewalk cocks						52	299	351
Number of service boxes							351	351
Number of boxes, frames and covers							52	52

List of Check-Valves.

Old High Service.

	Size in Inches.
Arlington street, 230 feet west of North avenue	6
Avon Hill and Linnæan streets	6
Concord avenue, 135 feet south from Buckingham street	6
Fayerweather and Reservoir streets	6
Garden and Linnæan streets	6
Lake View avenue, 150 feet north from Brattle street	6
Lake View avenue, 150 feet north from Huron street	10
Mt. Vernon street, 100 feet west from North avenue	6
Mt. Pleasant street, 150 feet south from Walden street	6
Raymond and Linnæan streets	6

New High Service.

	Size in Inches.
Appian Way, near Brattle street	4
Appleton street	6
Berkeley street, near Craigie street	4
Broadway, on line of 6-in. pipe crossing College grounds	6
Centre street, near Hancock street	4
Dana street, near Main street	4
Dana street, corner of Broadway	4
Dublin street	6
Harvard and Ellery streets (two valves)	6
Harvard and Hancock streets	6
Harvard and Prescott streets	4
Harvard and Trowbridge streets (two valves)	4
Harvard and Ware streets	4
Highland street on old 12-inch main	12
Kirkland and Cambridge streets	10
Kirkland and Frisbie place	4
Linnæan and Lancaster streets (old high-service extension)	6
Madison street and Concord avenue	4
Parker and Buckingham streets	4
Quincy street, near Broadway	4
Waterhouse street, near small Common	6

Statement of Stock on Hand, Nov. 30, 1890.

Wrought Iron Fittings.

	6-in.	4-in.	3-in.	2½-in.	Total.
Bushings	. ....	2–2	.....	2–2	4
Caps	.....	1	.....	.....	1
Couplings	2	7	2	3	14
Elbows	2	3	5	4	14
Flanges	2–4	2	2	.....	6
Flanges	2–2	.....	.....	.....	2
Pipe, in feet	.....	9	4	.....	13
Plugs	.....	3	.....	.....	3
Nipples	2	10	4	4	20
Reducing couplings	2–2	1–3	1–2	6–2	10
Tees	.....	1–1	1–2	.....	2

For Street Mains (Iron Pipes and Fittings).

	48 In.	36 In.	30 In.	24 In.	20 In.	16 In.	12 In.	10 In.	8 In.	6 In.	4 In.	3 In.	2 In.
Bends	.	..	1	2–16	1–8	...	3	7	5	...	4	..	..
Blow-off branches	..	..	..	...	1–6	...	...	..	..	...	..	..	..
Caps	..	..	..	...	...	...	6	11	12	16	2	..	..
Cast iron plugs	..	..	..	...	2	...	...	..	..	...	..	..	..
Clamp sleeves for cement pipe	..	..	..	...	...	...	...	3	8	5	3	..	..
Check valves	..	..	..	2	...	...	...	2	..	2	2	..	..
Clamp sleeves	..	..	..	8	4	...	...	..	..	...	..	..	..
Clamp sleeves	..	..	..	2–6	1–6	3	4	6	4	14	9	10	..
Clamps for cement pipes	..	..	..	...	4	...	...	..	...	...	1	..	..
Crosses	..	..	..	...	1	1–12	4	3	4	3	12	2	..
Crosses	..	..	..	...	...	3–6	5–4	8–6	3–4	9–4	..	..	..
Drain offsets	..	.	..	...	...	...	...	..	..	6	..	..	..
Elbows	..	..	..	1	...	2	...	2	6	2	11	..	..
Gates	..	..	..	...	...	...	1	2	3	3	5	..	8
Offsets	..	..	..	...	...	...	2	6	4	9	7	..	..
Reducers	..	..	..	1–10	2–12	1–6	10–8	2–8	2–4	33–4	9–3	..	..
Reducers	..	..	..	...	2–8	...	10–16	6–8	3–6	...	..	..	..
Sleeves	..	..	1	4	7	2	3	6	11	28	11	4	..
Tees	..	..	..	1	2	2	7	6	12	25	7	2	..
Tees	..	..	1–6	1–8	3–6	1–6	6–6	2–8	5–6	2–4	..	..	..
Tees	..	..	..	3–6	3–12	...	...	6–6	..	...	..	..	..
Tees	..	..	..	1–16	...	...	...	..	..	...	..	..	..
Tees	..	..	..	1–20	...	...	...	..	..	...	..	..	..
Wooden plugs	..	..	..	2	2	2	3	5	12	37	20	10	..
Y branches	..	..	..	1	1–12	...	1	..	..	...	..	..	..
Pipe	2	..	1	...	46	6	66	101	115	215	72	..	..

FOR SUPPLIES (GALVANIZED PIPE AND BRASS FITTINGS).

	2-in.	1½-in.	1¼-in.	1 in.	¾-in.	½-in.	
Air chambers	.....	.....	.....	31	85	38	.....
Bushings, different sizes	.....	.....	.....	.....	.....	.....	300
Caps	.....	3	15	13	16	40	.....
Chapman drip-valves	21	17	42	57	37	.....	.....
Check-valves	2	3	1	6	3	.....	.....
Couplings	23	51	41	39	31	35	.....
Crosses	3	16	16	16	11	.....	.....
Driving cocks, bushed and threaded	.....	.....	.....	36	20	.....	.....
Elbows	3 13–4	21	22	9	6	8 6–¾	....
Faucets	.....	.....	.....	11	3	11	.....
Fountain cocks	.....	.....	.....	.....	6	.....	.....
Hose nipples	.....	.....	.....	.....	26	.....	.....
Hydrant cocks	.....	40	.....	10	12	.....	.....
Lead connections	.....	.....	2	6	16	.....	.....
Lead connections and unions	.....	.....	.....	12	17	.....	.....
Nipples	100	125	100	270	100	4	.....
Pipe, galvanized, in feet	560	664	580	2180	750	.....	.....
Plugs	24	10	19	32	36	2	.....
Self-closing fountain faucets	.....	.....	.....	.....	.....	5	.....
Screw cocks for cement pipes	.....	4	.....	13	.....	.....	.....
Screw cocks	17	27	33	87	5	.....	.....
Sidewalk cocks	.....	.....	.....	70	8	.....	.....
Sill cocks	.....	.....	.....	.....	9	.....	.....
Sill valves, nickel-plated	.....	.....	.....	.....	4	.....	.....
Street elbows	.....	.....	.....	8	38	.....	.....
Stop and waste cocks	8	14	1	18	2	.....	.....
Tees	23	24	29	54	97	50	.....
Tees	16–¾ 15–1	14–¾	52–¾	26–¾	42–½	.....	....
Unions	20	24	40	71	10	20	.....
Reducing couplings, dif. sizes	.....	.....	.....	.....	.....	.....	108
Socket ends of rod, dif. sizes.	.....	.....	.....	.....	.....	.....	20
Service boxes	.....	.....	.....	.....	.....	.....	80

Stock in Shop and Yard.

2 axes.
21 iron boxes.
10 hydrant boxes.
24 cock boxes.
21 wooden boxes.
1 work bench.
1 work bench with drawers.
4 tool bags.
Lot of blocks and wedges.
5 iron bars.
4 tamping bars.
2 pairs rubber boots.
1 30-inch overflow bell.
1 thawing boiler and furnace.
16 blankets.
2 buggies.
1 Goddard buggy.
1 clock.
6 chairs.
2 barrels charcoal.
½ barrel clay.
2 casks cement.
500 feet cypress.
Lot of counters and ratchets.
1 hay cutter.
3 oil cans.
5 small oil cans.
1 washer cutter.
9 pipe cutters.
9 chains.

45 large frames and covers for gates.
13 small frames and covers for gates.
36 large frames and covers for hydrants.
2 tool chests.
3 oil covering for horses.
Lot of meter blocks and bolts.
4 drinking fountains.
2 small derricks.
2 breast derricks.
2 hay forks.
3 furnaces.
2 grindstones.
2 paving heaters.
6 harnesses.
6 horses.
1 blow-off hose.
50 feet of ¾-in. hose.
150 feet of 2½-inch hose.
3 hooks for tapping pipe.
1 floating hook.
2 hatchets.
2 hoes.
6 wooden horses.
1 claw hammer.
4 sledge hammers.
2 paving hammers.
3 hand hammers.
29 post hydrants.
3 hydrant valves.
25 stops and wastes for flush hydrants.
7 hydrant bodies.
17 post hydrant jackets.
26 post hydrant rods.
1 ¾-in. garden hydrant.
Lot of old junk.
4 lead kettles.
2 ladders.
4 ladles.
16,000 lbs. lead.
1 ⅝-in. Ball & Fitts meter.
2 1-in. Ball & Fitts meter.
1 ⅝-in. Crown meter.
2 ¾-in. Crown meter.
1 1-in. Crown meter.
1 4-in. Crown meter.
2 1-in. Hersey meter.
2 ⅝-in. Union Rotary meter.
1 1½-in. Union Rotary meter.
1 6-in. Union Rotary meter.
1 ⅝-in. Worthington meter.
1 ¾-in. Worthington meter.
1 1-in. Worthington meter.
1 2-in. Worthington meter.
3 machines for tapping cement pipe.
1 drilling machine, with drills complete.
2 tapping machines for supplies, with taps and drills.
1 threading machines, with dies.
1 water motor.
2 large malls.
93 lbs. packing.
12 sheets rubber packing.
2 diaphragm pumps with hose.
2 hand pumps.
7 thawing-out pumps.
11 plates, with dies.
450 feet thawing-out pipes.
Plane, square, level, etc.
8 pails.
25 picks.
Lot of 4-in. sheet piling.
3 pungs.
135 lbs. lead pipe.
6 2-in offsets.
8 trench rammers.
2 paving rammers.
1 ratchet and drills for tapping main pipes.
215 risers for boxes.
2 rakes.
13 shut-off rods.
2 buffalo robes.
2 lap robes.
2 ropes.
2 elevating screws.
2 bracing screws.
1 sand sieve.
1 sleigh.
8 screw-drivers.
4 saws.
Lot of block stones.
2 platform scales.
30 shovels.
230 seals.
1 stove with fixtures.
1 tank for measuring water.
1 set hydrant tools.
2 sets of main pipe tools.
1 truck:
4 rope tackles.
6 pipe tongs.
1 chain tongs.
2 trowels.
3 bench vises.

3 wagons.
½ cord wood.
15 pipe wrenches.
3 nut wrenches.
6 monkey-wrenches.
11 gate wrenches.
5 blow-off wrenches.
3 1-inch cock wrenches.
4 2-inch cock wrenches.
12 small tee wrenches.
4 flush hydrant wrenches.
1½ bushels rock salt.
1 lathe with usual chucks and tools.
2 snow shovels.

Tools at Fresh Pond.

Brick House Stable, Concord Avenue.

1 horse.
1 harness.
1 cart.
2 blankets.
1 hay rack.
1 snow plow.
2 ladders.
1 curry comb.
1 brush.
1 card.
7 forks.
2 shovels.
6 scythes.
1 hand force pump.
3 pails.
1 grain chest and measure.
1 oil covering for horse.
15 tons hay.
3 scythe snaths.

Store House, Black Estate.

1 mowing machine.
5 plows.
6 plow points.
2 grain chests.
1 wooden scoop.
1 iron roller.
1 road roller.
1 wheelbarrow.
1 grindstone.
1 harrow.
1 chain.
2 whipple-trees.
2 iron scoops.
2 tons of hay.

Stable, Gay Estate.

2 tons of hay.

On the Works, Fresh Pond.

2 tool chests.
1 stone boat.
2 iron scrapers.
14 round-pointed picks.
6 chisel-pointed picks.
3 chains.
4 bars.
36 shovels.
1 screen.
1 grab harness.
3 axes.
1 sledge.
2 iron wedges.
4 grub hoes.
2 paving hammers.
1 level.
1 caravan.
1 monkey-wrench.
1 hand hammer.
2 water pails.
1 pipe wrench.
25 feet rope.
1 cross-cut saw.
1 hand saw.
1 wheelbarrow.
1 evener.

Fountain, Gate House.

5 hoes.
3 gravel rakes.
3 shovels.
1 pot.
3 lanterns.
1 small skiff, with oars.
1 ladder.
2 wooden rakes.

Tools at Stony Brook.

1 row-boat, with oars.
2 gate wrenches.
2 pair grab-hooks.
1 rope fall.
40 feet rope.
1 ladder.
2 chairs.
1 sprinkling can.
1 whipple-tree and traces.
2 rakes.
1 scythe and snath.
2 whetstones.
1 sod knife.
1 lantern.
2 sickles.
1 ton coal.
20 pounds nails.
15 pounds paint.
150 pounds lead.
1 harness.
1 lawn mower.
1 stove and fixtures.
14 cast-iron signs.
1 monkey-wrench.
1 grindston.
1 shovel.
1 pick.
1 iron bar.
1 oiler.
1 lead kettle.
1 ladle.
1 tip-cart.
2 lengths 36-inch pipe.
12 lengths 30-inch pipe.
2 30-inch sleeves.
2 pike-poles.
2 grub hoes.
1 hoe.
1 pair iron traces.
1 axe.
1 sledge-hammer.
50 feet hose.
1 wheelbarrow.

At Reservoir.

6 rammers.
1 wooden rammer.
2 bars.
2 iron rakes.
1 wooden rake.
1 axe.
1 hand drill.
2 striking hammers.
1 nail hammer.
1 handsaw.
1 crosscut saw.
1 edger.
1 lead chisel.
1 hand axe.
1 jimmy.
1 bar.
12 lanterns.
1 headlight.
8 iron hangers.
1 sand drier.
1 oil can.
1 cement pail.
7 gate wrenches.
1 tool chest.
1 snow scraper.
1 cock wrench.
1 stop and waste rod.
1 lot caulkers' pointing tools.
4 brooms.
1 corn broom.
1 pump.
4 wooden rollers.
5 picks.
6 malls.
6 shovels.
2 wheelbarrows.
1 stove and pipe.
150 feet of hose.

3 iron driving caps.
4 ring bolts.
4000 feet spruce planking.
1 table.
1 chair.
2 bull points.
2 chains.

REPORT

OF THE

ENGINEER OF THE PUMPING STATION.

PUMPING STATION, CAMBRIDGE WATER WORKS,
December 3, 1890.

Hiram Nevons, Esq., Superintendent:—

SIR: I would report Engines Nos. 1 and 2 in first-class condition. The high-service engine will need quite extensive repairs the coming year. The boilers will require some repairs on the brick work and new mouth-pieces to the furnaces.

Engine No. 1, which at the date of last report, was being altered, was started in March and has worked very satisfactorily since.

The connecting of the pumping mains at the pumping station enables either engine to be run at its full capacity without increase of steam pressure.

The electric light plant has given perfect satisfaction and is a great convenience.

Following will be found a statement of the expenses at the pumping station, with the usual tables.

Respectfully submitted.

EDWIN C. BROOKS,
Engineer.

STATEMENT.

$845\frac{2000}{2240}$ tons Cumberland coal, at $4.72	$3,992 60
$271\frac{860}{2240}$ " " " $4.25	1,153 37
Oil, waste, packing, etc.	289 35
Repairs on engines and boilers	153 07
Repairs on buildings and care of grounds	473 55
Tools	33 33
Lighting	33 96
Ice	46 50
Salaries	6,097 00
	$12,272 73

Engine Record, Pond Levels and Rainfall.

Date.	Low Service Engines.						High Service Engine.			Total water pumped.	Daily average water pumped.	Total coal consumed.	Daily average coal consumed.	Average height of pond.	Rainfall.
	Engine No. 1.			Engine No. 2.											
	Pumping time.		Water pumped.	Pumping time.		Water pumped.	Pumping time.		Water pumped.						
	Hrs.	Min.	Gallons.	Hrs.	Min.	Gallons.	Hrs.	Min.	Gallons.	Gallons.	Gallons.	Lbs.	Lbs.	Feet.	Inches.
December, 1889				307	45	113,616,800	496	00	11,615,597	125,232,397	4,039,717	204,700	6,603	15.75	3.30
January, 1890				336	15	124,753,750	496	00	11,763,283	136,517,033	4,403,776	220,700	7,119	15.23	2.94
February, "	18	20	5,255,800	285	30	107,063,550	448	00	10,903,834	123,223,184	4,400,828	201,300	7,189	15.65	5.22
March, "	68	25	23,014,750	259	35	96,778,000	496	00	12,269,376	132,062,126	4,260,068	215,500	6,952	15 79	7.02
April, "				299	20	111,447,600	480	00	12,506,592	123,954,192	4,131,806	191,100	6,370	16.53	4.83
May, "				324	30	122,580,150	496	00	13,737,830	136,317,980	4,397,354	199,200	6,426	16 18	6.09
June, "				349	05	132,162,250	474	00	13,390,118	145,552,368	4,851,745	209,500	6,983	15 84	3.51
July, "	292	35	107,619,600	111	55	41,609,650	496	00	14,885,990	164,115,240	5,295,975	237,100	7,648	14.53	2.77
August, "	372	20	135,532,650				496	00	13,149,082	148,681,732	4,796,185	215,700	6,958	14.68	3.48
September, "	389	40	122,388,000				496	15	13,344,416	133,732,416	4,457,747	197,200	6,573	14.93	4.05
October, "	263	15	87,993,400	129	45	39,862,900	496	00	12,432,211	140,288,511	4,525,436	211,700	6,829	14.79	9.31
November, "				381	20	116,932,200	480	00	11,941,133	128,873,333	4,295,778	199,000	6,633	15.91	1.28
Total	1,404	35	481,804,200	2,785	00	1,006,806,850	5,850	15	149,939,462	1,638,550,512		2,502,700			53.80
Daily average	3	51	1,320,012	7	38	2,758,375	16	2	410,793	4,489,179		6,857		15.48	

Stock on hand December 1, 1890.

800 tons Cumberland coal, 45 gallons cylinder oil, 32 gallons engine oil, 30 gallons kerosene, 60 lbs. cotton waste, 30 lbs. rubber packing, 20 lbs. Usidurian packing, 8 lbs. square flax packing, 30 manhole gaskets, $\frac{1}{2}$ quire emery cloth, 1 doz. gauge glasses, 10 lbs. soap, 5 brooms, 125 fire brick, 300 lbs. bolts and nuts, 1 lot iron pipe, 1 lot pipe fittings.

TOOLS, FURNITURE AND INSTRUMENTS.

1 18-in.x10-ft. engine lathe, with chucks, tools, etc., 1 5-in.x6-in. engine, 1 lot shafting, pulleys and belting, 1 grindstone, 1 emery wheel, 2 vises, 2 vise benches, 3 die plates and dies, 1 set pipe taps, 1 set hand taps, 2 pipe cutters, 14 pairs pipe tongs, 3 hand hammers, 1 copper hammer, 18 cold chisels 1 hand bellows, 10 files, 6 screw wrencnes, 5 Stillson wrenches 2 clamp screws, 2 jack screws, 1 sledge, 2 ratchets, 24 drills, 1 breast drill, 6 steel bars, 2 soldering irons, 4 cylinder head cranes, 12 eye-bolts, 75 starting bolts, 1 chain fall, 3 tackles, 2 ladles, 4 wooden horses, 1 oil cabinet, 1 set measures, 1 lot oil cans, 1 oil pump, 1 carpenter's bench and tools, 2 axes, 2 hand axes, 2 hatchets, 1 set fire tools, 1 coal car, 1 pair platform scales, 2 wheelbarrows, 12 scoop shovels, 1 tube scraper, 1 forge, 1 anvil, 5 pairs tongs, 3 hand chisels, 2 lawn mowers, 1 steel rake, 2 wooden rakes, 4 forks, 1 spade, 1 weeder, 1 pick, 1 ice saw, 4 ladders, 3 step ladders, 200 feet 2-in. hose and pipe, 100 feet $\frac{1}{2}$-inch hose and pipe, 1 water cooler, 6 fire pails, 10 water pails, 1 window brush. 1 floor brush, 1 dust brush, 1 feather duster, 1 dust pan, 1 lot matting, 5 mats, 6 spittoons, 1 lot gas fixtures, 1 dynamo, 26 cells Julien storage battery, 1 arc lamp, 1 lot incandescent lamps and fixtures, 4 bracket lamps, 4 lanterns, 4 hand lamps, 1 desk, 2 tables, 2 clocks, 12 chairs, 1 barometer, 1 hygrophant, 1 thermometer, 2 rain gauges, 1 snow gauge.

TOOLS, ETC., AT ENGINE HOUSE AT POND

1 12-inch centrifugal pump, 1 lot belting, 1 No. $2\frac{1}{2}$ Blake pump, 1 belt clamp, 1 lot 12-in. pipe, 1 Hancock inspirator, 1 cot bed and bedding.

REPORT

OF THE

CHIEF ENGINEER OF THE FIRE DEPARTMENT.

CHIEF ENGINEER'S OFFICE, CITY HALL,
CAMBRIDGE, December 22, 1890.

To His Honor the Mayor and the City Council:—

GENTLEMEN: In compliance with the provisions of the Ordinance governing the Fire Department, I herewith present my twelfth annual report, the same being for the year beginning December 1, 1889, and ending November 30, 1890.

Organization.

The organization of the Department consists of a Chief Engineer, three Assistant Engineers, and other officers and members, including the Fire Alarm employés, to the number of ninety-nine men.

During the year, six resignations of members have been received and accepted.

It was found necessary in the interest of discipline to cause one dismissal.

Transfers and appointments were made to fill the vacancies.

Apparatus.

The apparatus in regular service is generally in good working condition, with the exception of Ladder Truck No. 2, which was, by order of the Committee on Fire Department, sent to the repair shop on November 22, to be reconstructed and painted. The spare apparatus, which consists of an engine, hose carriage, and ladder truck, are in fair condition.

During the year the following named apparatus has been purchased and placed in service: A hose wagon in Engine House No. 1, a ladder truck in Ladder House No. 1, and a fuel wagon at Engine House No. 2.

They are first class pieces of apparatus, and were built by the Abbot-Downing Co., of Concord, N. H. As near as it is possible for me to judge at the present time, this apparatus will only require ordinary repairs the coming year.

Hose.

Since my last report, 850 feet of hose has been condemned and 700 feet purchased. The total amount of $2\frac{1}{2}$-inch hose now on hand and in serviceable condition is 9,950 feet.

Owing to the hard usage that hose receives at fires, it is necessary to procure a quantity each year, to replace that which becomes weak and unreliable.

Horses.

During the year four horses have been bought and two disposed of by exchange. There are now twenty-six in the service of the Department, and, with few exceptions, are well adapted for the work required of them. It will be necessary, during the coming year, to exchange some of the older horses, that have been in the service a number of years, for younger ones.

Fire Alarm Telegraph.

The Fire Alarm Telegraph has, with its customary good care, been kept in reliable working condition. The usual repairs have been made, such as the removal of old wires and the relocating of lines wherever required; also the extending of the lines to connect with new signal boxes located as follows: 29, Webster avenue, corner of Plymouth street; 126, Pine street, corner of Washington; 165 North avenue, opposite Linnæan street, and 228, which was purchased by Curtis, Davis & Co., and placed on the boiler-house, in their factory yard, on Broadway.

The total number of street and private signal boxes now in service is 86.

The bell located in the tower of the Latin School Building on Lee street was removed to the tower of Engine House No. 2, Main street, July 23.

I would recommend that a fire alarm bell-striker be purchased and placed in connection with the bell in the tower of the City Hall; also that the bell-striker in the tower of the Baptist

Church, Central square, be removed to the tower of Engine House No. 2.

I would also recommend that additional fire alarm boxes be purchased the coming year and placed in such localities as may need them.

Houses.

The drainage of Engine House No. 2 is in poor and defective condition. The sewer water frequently backs up into the cellar, making it very disagreeable and unhealthy for the men who are obliged to live there. Something should be done to remedy the evil. The engine room floor of Engine House No. 1 is in poor condition and ought to be renewed. Otherwise the houses of the Department are generally in good condition. –

I desire to call your attention to the need of a building for the purpose of storing the spare apparatus. The room formerly used for that purpose was turned over to the Police Department for a patrol wagon house and stable. I hope the matter will receive your early attention, as a building for that use is very much needed.

Hydrants.

The Superintendent of Water Works has, by direction of the Water Board, located fourteen additional hydrants of the post pattern the past year, making the total number for fire service six hundred and seventy.

Appropriation, Receipts and Expenditures.

Appropriation	$56,600 00
Receipts	264 47
Total appropriation	$56,864 47

EXPENDITURES.

Apparatus, new	$2,190 00	
Apparatus, repairs of	648 99	
Fire alarm and supplies	1,413 98	
Fines of members	194 50	
Fuel for houses and engines	785 53	
Furniture and bedding	149 95	
Gas	876 63	
Amounts carried forward	$6,259 58	$56,864 47

Amount brought forward	$6,259 58	$56,854 47
Harnesses and repairs	223 42	
Hay, grain and straw	2,371 55	
Horses	895 00	
Horseshoeing	516 45	
Hose and repairs	852 22	
Horse hire and men (extra)	247 00	
Incidentals	114 92	
Pay-roll	42,586 56	
Supplies	521 56	
Telephones, rent of, from Sept. 23, 1889, to Sept. 1, 1890	489 42	
Vacations and sickness	957 14	
Veterinary services and medicine	141 22	
Washing	325 46	
		$56,501 50
Balance unexpended		$362 97

Fires and Alarms.

The total number of fires and alarms from all causes for the year ending November 30, 1890, was: Bell alarms, 123; still alarms, 25; making a total of 148. The losses and insurance, as near as could be ascertained, were as follows:—

	Loss.	Insurance.	Insurance Paid.
On buildings	$25,851	$124,549	$24,106
On contents	37,963	68,947	23,659
Total	$63,814	$193,496	$47,765

The following table will show the different causes of fires and alarms for the year:—

Alarms, accidental automatic	5
" " auxiliary	5
" false	1
" out of city	5
Ashes, hot	1
Boiler, explosion of	1
Burning grass	2
Candles, careless use of	2
Careless use of fire	2
Cigar stub	1
Chimneys, burning soot in	12
Defective chimney	1
Defective flues	2
Amount carried forward	40

Amount brought forward	40
Electric light wire	1
Fire-crackers	2
Fireworks	1
Fat, burning of	2
Gasoline stove	1
Gas, explosion of	1
Gas jet	2
Hot iron	1
Incendiary	5
Kerosene lamps, exploding, breaking and upsetting of	19
Matches, careless use of	3
" children playing with	11
" and mice	2
Over-heated furnaces and chimneys	5
Rekindling of fires	2
Rubbish, burning of	3
Sparks from chimneys	8
" " furnace	4
" " locomotive	2
Smoke mistaken for fire	7
Spontaneous combustion	4
Stoves, fire from	4
Swamp, burning of	2
Unknown	13
Wood in stove oven taking fire	3
	148

Accidents.

While Engine No. 5 was answering an alarm from box 21, on the afternoon of December 14, the wheels of the engine, in turning the corner of Main and Brookline streets, became locked in the car-track, thereby springing the forward axle and doing other injury to the engine. The driver, James S. Casey, was thrown from his seat, receiving slight injury to his side and hip.

Patrick J. Hayes, hoseman, of Engine Co. No. 3, while on duty January 1, was severely cut on right wrist by falling glass.

William C. Pierce, ladderman, of Ladder Company No. 1, while on duty at a fire May 10, sprained his ankle, thereby rendering him unable to do duty for six weeks.

By the explosion of a rendering tank during the fire at J. C Dow & Co.'s tallow works on Portland street, May 30, assistant foreman Conrad D. Kinnear, of Engine Co. No. 5, and Charles Barney, a volunteer, were thrown down and cut and bruised by flying débris.

John H. McDermott, ladderman of Ladder Co. No. 1, while on duty June 16, was cut on hand by falling glass.

In responding to an alarm from box 12, October 7, Engine No. 5 was upset on the corner of Third and Gore streets, caused by the rear wheels sliding on the car-tracks, and on leaving the car-track the nigh wheel struck an iron water-gate cover with such force as to turn the engine over on its side. The engine was but slightly damaged, and was repaired at an expense of about forty-five dollars. There were three men on the engine at the time and all escaped with but trifling injuries.

Appointments, Transfers and Discharges.

Engine Company No. 1.—Edward A. Hurd, hoseman, was transferred to Engine Company No. 4, February 1.

Engine Company No. 2.—John G. Hicks, hoseman, was discharged at his own request January 31, and Elmer B. Hayford was appointed to fill the vacancy March 1.

Engine Company No. 3.—Edwin Winward, assistant foreman, was discharged at his own request September 17, and Walter Baker, hoseman, was appointed to fill the vacancy September 23. Joseph W. Hopkins was appointed hoseman September 30.

Engine Company No. 4.—Edgar H. Locke, foreman, was discharged at his own request January 31, and William J. Hanna, assistant foreman, was appointed foreman same date. George F. Tibbets, hoseman, was appointed Assistant Foreman February 1. Nicholas J. Penney, hoseman, was discharged at his own request February 28. Joseph Birge was appointed hoseman March 1, and discharged October 20 for conduct unbecoming a member of the Department. George F. Durgin was appointed to fill the vacancy November 11.

Engine Company No. 5.—Hugh T. Barker, hoseman, was discharged at his own request January 18, and James H. McGrath was appointed to fill the vacancy January 28.

Hook and Ladder Company No. 1.—John A. Bartlett, ladderman, was discharged at his own request January 31. Thomas H. Kneeland, ladderman, was transferred to Engine Company No. 1, as hoseman, February 18. John T. McNamee, ladderman, was appointed permanent foreman March 1, and Edward P. Donohue and William C. Pierce were appointed laddermen March 1.

Hook and Ladder Company No. 2.—Thomas P. Rowe was

appointed ladderman December 31, 1889. Joseph E. Chick, ladderman, was discharged at his own request August 18, and Charles A. Cairns was appointed to fill the vacancy September 9.

Conclusion.

I desire to express my personal acknowledgments to His Honor the Mayor for his uniform courtesy and for the interest manifested by him in all matters connected with the Department.

To the Committee on Fire Department for the prompt and cheerful manner in which they have given me their hearty coöperation, I tender my sincere thanks.

My thanks are also due the officers and members of the Department for the prompt and faithful discharge of their duty the past year.

Respectfully submitted,

THOMAS J. CASEY,

Chief Engineer.

APPENDIX.

Joint Standing Committee on Fire Department.

Aldermen . . . . . AYLWARD and SORTWELL.
Councilmen . . . . . MACDONALD, WINTER and ELLIS.

Board of Engineers.

Name.	Residence.	Rank.	Age.
Permanent Force.			
Thomas J. Casey	173 Cambridge Street	Chief Engineer	57
Nathaniel W. Bunker	6 Beech Street	1st Asst. "	47
Charles W. Brackett	133 Mt. Auburn St.	2d " "	54
William B. Cade	27 Park Street	3d " "	56
Nathaniel W. Bunker		Secretary of Board	

Engine Company No. 1.

House, Brattle Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
1	Edwin E. Priest	Engineman	53	46 Winthrop street.
2	Hiram W. Hooker	Driver of engine.	52	Engine House.
3	Charles R. Hooker	Driver of hose	46	15 Eliot street.
	Call Force.			
23	John H. Brown	Foreman	39	35 Pleasant street.
24	Daniel E. Shea	Asst. Foreman	34	12 Murray street.
25	James Jefferson	Stoker	37	9 Eliot street.
28	William H. Emery	Hoseman	57	141 Mt. Auburn street.
26	John L. Jones, Jr.	"	39	650 Main street.
30	James McLean	"	30	61 Boylston street.
27	Albert L. Landerkin	"	36	1 Wallace Terrace.
31	Daniel E. Powers	"	31	19 DeWolf street.
29	Thomas H Kneeland.	"	27	18 Mill street.

Engine Company No. 2.

House, Main Street, near Winsor.

No, of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
4	Thomas Wiseman.....	Engineman.....	46	....392 Main street.
5	John H. Walker.....	Driver of engine.	61	....7 Winsor street.
6	Albert F. Sawyer	Driver of hose..	47	....19 Cherry street.
	Call Force.			
32	James Cunningham.....	Foreman	48	..... 25 State street.
33	Arthur C. Day.....	Asst. Foreman..	53	....47 Austin street.
34	William Parks.....	Stoker	46	....9 Winsor street.
35	Benjamin D. Foss.....	Hoseman.....	54	....21 Cherry street.
36	John McCarthy.....	"	40	....16½ Clark street.
37	John Haley.....	"	36	....411 Main street.
38	Charles H. Chapman....	"	37	...401½ Main street.
39	Warren H. Dow.....	"	40	....414 Main street.
40	Elmer B. Hayford.....	"	27	School street, Hotel [Weston.

Engine Company No. 3.

House, Fourth Street, near Cambridge.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
7	Hiram Blood.....	Engineman.	58	.. ...40 Fifth street.
8	Peter F. McSorley.....	Driver of engine.	31	....33 Fourth street.
9	Lorenzo H. Dale.....	Driver of hose..	48	..... 94 Gore street.
	Call Force.			
43	William F. Newman	Foreman	44	....42 Winter street.
42	Walter Baker.....	Asst. Foreman..	36	..... 91 Gore street.
45	Eliot E. Alley.....	Stoker.	54	.73 Thorndike street.
46	Timothy J. Mahoney....	Hoseman.....	42	..... 100 Vine street.
41	William H. Cairns.....	"	27	....20 Fourth street.
48	John F. Brassel	"	33	....12 Warren street.
49	Patrick J. Hayes.....	"	27	.....92 Gore street.
47	Exurie J. Willmeth... .	"	27	136 Cambridge street.
44	Joseph W. Hopkins.....	"	25	.....54 Fifth street.

Engine Company No. 4.

House, North Avenue, near Russell Street.

No. of badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
10	John E. Ricker	Engineman	46	185 North avenue.
11	George E. Muzzey	Driver of engine.	48	221 North avenue.
12	Sylvanus G. Griffin	Driver of hose	43	Engine house.
	Call Force.			
52	William J. Hanna	Foreman	44	9 Rice street.
50	George F. Tibbetts	Asst. Foreman	50	6 Beech street.
57	Benjamin Young	Stoker	46	225 North avenue.
58	Arthur C. Griffin	Hoseman	40	17½ Rice street.
56	Josiah P. Parsons	"	42	2 Regent street.
55	Jeremiah O'Connor	"	32	41 Spruce street.
51	Daniel McCaughin	"	30	3 Russell street.
53	Edward A. Hurd	"	40	Henderson court.
54	George F. Durgin	"	22	Regent street.

Engine Company No. 5.

House, Inman Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
13	Charles E. Conner	Engineman	40	511 Cambridge street.
14	Joseph B. Cartwright	Driver of engine.	54	529 Cambridge street.
15	Francis P. Carr	Driver of hose	46	195 Hampshire street.
	Call Force.			
59	Francis P. Scanlan	Foreman	44	213 Cambridge street.
60	Conrad D. Kinnear	Asst. Foreman	51	286 Broadway.
61	George W. McIntire	Stoker	35	70 Inman street.
62	John E. Fitzgerald	Hoseman	43	46 Washington street.
64	William T. King	"	34	Engine house.
65	James F. Glynn	"	40	284 Broadway.
67	George P. Bannister	"	29	414 Main street.
63	William H. Crump	"	39	61 Market street.
66	James H. McGrath	"	34	410 Cambridge street.

Chemical Engine Company No. 1.

House, Western Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
17	Lewis C. Clark	Engineman	46	Engine House.
18	William Haley	Driver of engine.	42	117 Auburn street.
	Call Force.			
94	George W. Butler	Hoseman	48	26½ River street.

Relief Engineer.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
16	William H. Lydston....	Engineman.....	43	....24 Norfolk street.

Hook and Ladder Company No. 1.

House, Eliot Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
22	John T. McNamee.....	Foreman	35	99 Mt. Auburn street.
19	Albert S. Benson.....	Driver.....	46	...54 Boylston street.
	Call Force.			
75	James P. Ewell.....	Asst. Foreman..	54	...56 Franklin street.
69	Charles Emerson.....	Ladderman.....	45	.....14 Wright street.
73	Charles H. Waite.....	"	44	.....43 Jay street.
76	Charles A. Sharon.....	"	41	..Rear 13 Pine street.
78	William R. Mitchell.....	"	38	...15 Charles River st.
80	John H. McDermott.....	"	40	..... 11 Dodge street.
68	James H. Furfey.....	"	33	.....23 Prince street.
74	James W. Irwin.....	"	36	...60 Boylston street.
77	William Stolba.....	"	33	...17 De Wolf street.
70	Thomas H. Donlan.....	"	29	.....38 Grant street.
72	Edward P. Donahue.....	"	33	..1 Wallace st. court.
79	William C. Pierce.....	"	24	.....12 Appian way.

Hook and Ladder Company No. 2.

House, Portland Street.

No. of Badge.	Name.	Rank.	Age.	Residence,
	Permanent Force.			
21	Thomas L. Hunter.....	Foreman.....	50	.....5 Winsor street.
20	Thomas Mimnaugh.....	Driver.	37	....33 Warren street.
	Call Force.			
81	James F. Dalton.....	Asst. Foreman..	53	....17 Squire's court.
91	Lincoln E. Wheeler.....	Ladderman	46	....48 Cherry street.
92	John Gaughan.....	"	48	.....25 Ninth street.
90	Albert Smith	"	36	.....4 Eaton street.
89	Andrew Burke.....	"	47	.....87 Vine street.
84	John B. Maguire.....	"	31	.....25½ Gore street.
85	Thomas F. O'Connell...	"	29	.....14 Ninth Street.
88	Charles H. Cutting.....	"	37	.....6 Harold place.
83	James M. Casey.....	"	25	173 Cambridge street.
82	James T. McCabe.....	"	29	..152 Franklin street.
86	Thomas P. Rowe.....	"	28	291 Cambridge street.
87	Charles A. Cairns.....	"	24	.....16 Clark street.

Fire Alarm Telegraph.

Battery Room, Bratlle Square Building.

Name.	Rank.	Age.	Residence.
Permanent Force.			
George J. Blaisdell.....	Asst. Superintendent	46	...46 Winthrop street.
Arthur W. Daniels.....	Repairer	37	.... ..12 Appian way.
David J. Campbell.....	Batteryman.....	43	..Fire Alarm Station.

FIRES AND ALARMS.

From December 1, 1889, to December 1, 1890.

DECEMBER.

Monday, Dec. 2, 10 a. m. Box 32.

No. 191 Norfolk street. Owned by J. J. Kirley. Loss, $175. Insurance, $1,500. Occupied by J. F. McDonald as dwelling. No loss. Originated in the cellar. Cause, a piece of burning wood carelessly thrown amongst excelsior.

Monday, Dec. 2, 10.30 a. m. Box 32.

No. 191 Norfolk street. Rekindling of fire. Alarm needless.

Friday, Dec. 6, 8.30 a. m. Still.

No. 191 Portland street. Owned and occupied by J. P. Cullen as dwelling. Loss trifling. Originated in a sofa. Cause, child and matches.

Saturday, Dec. 7, 7.35 p. m. Still.

Blackstone street. Owned and occupied by H. O. Houghton & Co. as book bindery. Cause, accidental automatic alarm.

Saturday, Dec. 7, 8.20 p. m. Still.

Blackstone street. Owned and occupied by H. O. Houghton & Co. as book bindery. Cause, accidental automatic alarm.

Monday, Dec. 9, 4.31 p. m. Box 32.

No. 418 Cambridge street. Owned by Patrick Ferry. Loss, $600. Insurance, $4,000. Occupied by J. P. McSorley as provision store. Loss, $800. Insurance, $500. Originated in the office. Cause, upsetting of a kerosene lamp.

Thursday, Dec. 12, 8.20 p. m. Box 71.

No. 390 North avenue. Owned and occupied by John Coughlin as stable. No loss. Cause, unknown. Alarm needless.

Saturday, Dec. 14, 2.48 p. m. Box 21.

Waverly street. Owned and occupied by John Reardon & Sons as soap manufactory. Cause, accidental auxiliary alarm.

Tuesday, Dec. 17, 5.39 p. m. Box 36.

No. 86 Franklin street. Owned by G. F. Mason. Loss, $564. Insurance, $500. Occupied by G. F. Mason as dwelling. Loss, $100. No insurance. Cause, upsetting of a kerosene lamp.

Wednesday, Dec. 18, 10.40 p. m. Box 4.

Rear Medford street, Somerville. Owned and occupied by John P. Squire & Co. as pork packers. Cause, electric light wires.

Thursday, Dec. 19, 12.01 p. m. Box 59.

Harvard row. Owned by Harvard College. Occupied by several parties as dormitory. No loss. Cause, paper near stove taking fire.

Monday, Dec. 23, 8.27 a. m. Box 15.

Bent street. Owned by S. S. Hamill. Loss, $425. Insurance, $1,500. Occupied by S. S. Hamill as organ manufactory. Loss, $1,000. Insurance, $2,500. Originated on second floor. Cause, unknown.

Monday, Dec. 23, 3.51 p. m. Box 49.

No. 88 Ellery street. Owned and occupied by F. H. Whitman as dwelling. Loss, trifling. Originated in a Christmas tree. Cause, child and matches.

Monday, Dec. 23, 6.15 p. m. Box 134.

Beacon street, Somerville. Owned and occupied by West End Street Railway Co. Assistance called for. Engine Companies Nos. 2 and 5 responded.

Tuesday, Dec. 24, 4.56 p. m. Box 16.

No. 221 Main street. Owned by B. C. Welch. Loss, $700. Insurance, $5,200. Occupied by B. C. Welch as hotel. Loss, $507. Insurance, $800. Originated in bedroom on second floor. Cause, unknown.

Saturday, Dec. 28, 9.20 a. m. Still.

No. 131 Portland street. Owned and occupied by M. F. Hillary as dwelling. No loss. Cause, pan of fat taking fire.

Monday, Dec. 30, 6.41 a. m. Box 28.

No. 185 Broadway. Owned by E. E. Ericsson. Loss, 535. Insurance, $6,000. Occupied by J. F. Holmberg as hay and grain store. Loss, $487. Insurance, $900. Cause, unknown.

Monday, Dec. 30, 4.18 p. m. Box 4.

Gore street. Owned and occupied by J. P. Squire & Co. as pork packers. No loss. Originated in the oil room. Cause, careless use of lighted candle.

JANUARY.

Wednesday, Jan. 1, 1.40 a. m. Box 17.

No. 297 Main street. Owned by G. M. Rogers estate. Loss, $750. Insurance, $1,700. Occupied by C. T. Lindstrom and others as dwellings. Loss, $300. No insurance. Originated in bedroom occupied by C. T. Lindstrom on fourth floor. Cause, explosion of kerosene lamp.

Thursday, Jan. 2, 8.14 p. m. Box 36.

Nos. 531–535 Main street. Owned by George Bird. Loss, $1,500. Insurance, $1,000. Occupied by Anderson & Henderson as furniture store. Loss, $1,800. Insurance, $2,000. Occupied by N. J. O'Shaughnessy as tailor. Loss, $561. Insurance, $1,500. Occupied by James Cox as printer. Loss, $2,250. Insurance, $3,500. Originated in furniture store. Cause, unknown.

Sunday, Jan. 12, 1.10 a. m. Box 25.

No. 503 Main street. Owned by B. P. Clark & Co. Loss, $100. No insurance. Occupied by B. P. Clark & Co. as confectionery store. Loss, $75. No insurance. Originated in a barrel of waste paper. Cause, unknown.

Wednesday, Jan. 15, 7.15 p. m. Box 32.

No. 157 Winsor street. Owned by Patrick Conlon. Occupied by several parties as dwellings. No loss. Cause, soot in chimney taking fire.

Thursday, Jan. 16, 9.07 p. m. Box 73.

No. 189 Spruce street. Owned and occupied by Bridget Fitzgerald as dwelling. No loss. Cause, soot in chimney taking fire.

Monday. Jan. 20, 4.56 p. m. Box 15.

No. 112 Charles street. Owned by Martin Dinan. Occupied by J. F. Donovan as dwelling. Loss, trifling. Cause, tablecloth taking fire from stove.

Thursday, Jan. 23, 3.15 p. m. Still.

No. 3 Charles River street. Owned by Charles Moore. Occupied by Henry Kneeland as dwelling. No loss. Cause, upsetting of kerosene lamp.

Monday, Jan. 27, 6.20 p. m. Still.

No. 286 Main street. Ivers & Pond piano manufactory. Cause, accidental automatic alarm.

Tuesday, Jan. 28, 1.50 p. m. Still.

Fire in Arlington. Assistance called for. Engine Co. No. 4 responded.

Wednesday, Jan. 29, 3.57 p. m. Box 6.

No. 164 Main street. Owned by James Kneeland. Occupied by John Grieves as dwelling. No loss. Cause, wood in stove oven taking fire.

FEBRUARY.

Tuesday, Feb. 4, 9.20 a. m. Box 121.

No. 45 Chestnut street. Owned by G. D. Chamberlain. Occupied by E. H. Brooks as dwelling. Cause, smoke mistaken for fire.

Thursday, Feb. 6, 6.56 p. m. Box 32.

No. 199 Norfolk street. Owned by Thomas Lucy. Loss, $514. Insurance, $2,500. Occupied by Thomas Lucy as grocery and dwelling. Loss, $125. Insurance, $500. Originated in the store. Cause, a lighted match dropped into kerosene oil.

Sunday, Feb. 9, 6.56 p. m. Box 168.

No. 195 North avenue. Owned by A. B. Potter. Loss, $370. Insurance, $7,000. Occupied by A. D. Cleveland as locksmith and pool-room. Loss, $325. Insurance, $325. Cause, explosion of kerosene lamp.

Thursday, Feb. 13, 5.40 p. m. Still.

Foot of Magazine street. Grass burning on the marsh. Cause, set on fire by boys.

Thursday, Feb. 13, 11.10 p. m. Still.

No. 105 Gore street. Owned by C. S. Hanks. Loss, trifling. Occupied by J. T. Davey as dwelling. Loss, $50. No insurance. Cause, incendiary.

Saturday, Feb. 15, 8.46 p. m. Box 27.

No. 168 Harvard street. Owned and occupied by William Campbell as dwelling. Loss, $15. Insurance, $2,500. Cause, upsetting of a kerosene lamp.

Monday, Feb. 17, 11.47 a. m. Still.

No. 32 Brattle street. Cause, smoke mistaken for fire.

Friday, Feb. 21, 3.20 p. m. Still.

No. 5 Ninth street. Owned and occupied by Thomas Connerty as dwelling. No loss. Cause, soot in chimney taking fire.

Saturday, Feb. 22, 5.19 a. m. Box 14.

No. 200 Cambridge street. Owned and occupied by Joseph Metzger as dwelling. Loss, $65. Insurance, $2,000. Originated in the cellar. Cause, thawing out water-pipe.

Sunday, Feb. 23, 11.45 p. m. Box 26.

No. 337½ Main street. Owned by J. P. Stienberg heirs. Occupied by W. J. Prince as dwelling. Loss, trifling. Originated in a bedroom. Cause, breaking of a kerosene lamp.

Tuesday, February 25, 11.10 p. m. Box 2.

Bridge street. Boston & Maine R. R. freight yard. Originated in a car of cotton. Loss, $268. Insurance, $268. Cause, sparks from locomotive.

Wednesday, Feb. 26, 8.22 p. m. Box 27.

No. 57 Winsor street. Cause, smoke mistaken for fire.

Friday, Feb. 28, 6.19 p. m. Box 26.

State street. M. E. Rideout's mill. Cause, accidental auxiliary alarm.

MARCH.

Wednesday, March 12, 5.02 p. m. Box 26.

State street. M. E. Rideout's mill. Cause, accidental auxiliary alarm.

Thursday, March 13, 3.38 p. m. Box 28.

No. 126 Portland street. Owned and occupied by Gilmore & Eustis as iron rolling mill. Loss, trifling. Originated in the wheel-pit. Cause, hot iron dropping into oil.

Monday, March 17, 8.05 a. m. Still.

No. 15 Oxford street. Owned and occupied by F. C. Foster as dwelling. No loss. Cause, soot in chimney taking fire.

Tuesday, March 18, 1.42 p. m. Box 271.

Rear Harvey street. Cause, burning grass.

Thursday, March 20, 3.29 a. m. Box 25.

No. 539 Main street. Owned by Charles James estate. Loss, $240. Insurance, $4,500. Occupied as a hall. Originated in a closet on third floor. Cause, supposed by dropping a lighted match into waste paper.

Thursday, March 20, 9.10 p. m. Box 25.

No. 454 Main street. Owned by A. C. Lamson. Loss, $174. Insurance, $1,800. Occupied by Emil Tolksdorff as upholsterer. Loss, $296. Insurance, $1,000. Occupied by A. J. Rady as druggists' sundries. Loss, $94. Insurance, $800. Originated in upholsterer's room near stove. Cause, unknown.

Friday, March 21, 7.34 a. m. Box 134.

No. 46 Tremont street. Owned and occupied by W. E. Dodge as dwelling. No loss. Cause, soot in chimney taking fire.

Saturday, March 22, 2.04 p. m. Box 43.

No. 11 Hayes court. Owned and occupied by John McAuliffe as dwelling. No loss. Cause, wood in stove oven taking fire.

APRIL.

Thursday, April 3, 7.02 p. m. Box 34.

No. 9 Seckel street. Owned by P. G. Porter. Occupied by Roscoe Carlon as dwelling. Loss, trifling. Cause, explosion of a kerosene lamp.

Thursday, April 3, 7.10 p. m. Box 23.

No. 1 Rollins court. Owned by Adolphus Osborn. Occupied by W. H. McMarston as dwelling. Cause, soot in chimney taking fire.

Tuesday, April 8, 7.41 p. m. Box 25.

No. 436 Main Street. Owned by C. P. Keith. Oecupied by J. H. Osborn as furniture store. No loss. Originated in packing around a drain pipe. Cause, rats and matches.

Saturday, April 12, 2.44 p. m. Box 34.

No. 4 Union court. Owned by E. B. Dickerson. Occupied by John Kenney as dwelling. No loss. Cause, breaking of a kerosene lamp.

Sunday, April 13, 7.37 p. m. Box 36.

No. 654 Main street. Owned by Mrs. J. P. Thayer. Occupied by G. H. Adams as dwelling. Loss, trifling. Originated in shed. Cause, upsetting of a kerosene lamp.

Wednesday, April 16, 10.09 a. m. Box 73.

Rear Spruce street. Owned by Bay State Brick Co. Loss, trifling. Occupied as privy. Cause, children and matches.

Wednesday, April 16, 11.33 a. m. Box 38.

No. 39 Hamilton street. Owned and occupied by J. H. Snow as stable. Loss, $20. Insurance, $500. Originated on the outside of building. Cause, burning rubbish.

Thursday, April 17, 132 p. m. Box 9.

No. 5 Short street. Owned by Boston & Maine Railroad Company. Loss, $9. Insurance, $2,000. Occupied by several families as dwellings. Originated on the roof. Cause, sparks from a locomotive.

Friday, April 18, 11.49 a. m. Box 6.

Rear Third street. Owned and occupied by Damon Safe and Iron Works Co. for annealing iron. Loss, $150. No insurance. Originated in the roof. Cause, sparks from furnace.

Friday, April 18, 2.27 p. m. Box 16.

No. 91 Broadway. Owned and occupied by Coleman Bros. as wood-shed. Loss, trifling. Originated on the roof. Cause, sparks from chimney.

Thursday, April 24, 815 p. m. Box 16.

Munroe strect. Burning rubbish. Cause, set on fire by boys.

Sunday, April 27, 4.47 p. m. Box 26.

State street. M. E. Rideout's mill. Cause, accidental auxiliary alarm.

Tuesday, April 29, 3.12 p. m. Box 9.

No. 18 Cambridgc street. Owned and occupied by I. G. Felt as blacksmith shop. Loss, $60. Insurance, $900. Originated on the roof. Cause, sparks from chimney.

Wednesday, April 30, 10.48 p. m. Box 28.

Portland street. Owned by Edmund Reardon and J. H. Dow & Co. Loss, $3,480. Insurance, 3,049. Occupied by J. C. Dow & Co. as tallow and grease works. Loss, $9,285. Insurance, $3,724. Cause, unknown.

Wednesday, April 30, 11.19 p. m. Box 27.

Cause, the explosion of a rendering tank during the fire at J. C. Dow & Co.'s tallow works on Portland street. The tank was carried some 300 yards and crashed into the house owned and occupied by Thomas Cowan, 41 Webster avenue, doing considerable damage to the building. There was no loss by fire.

MAY.

Tuesday, May 6, 6.10 p. m. Still.

Green street. F. A. Kennedy & Co,'s bakery. Cause, accidental automatic alarm.

Saturday, May 10, 3.23 a. m. Box 57.

No. 106 Oxford street. Owned by S. R. Ellis. Loss, $5,500. Insurance, $5,500. Occupied by S. R. Ellis *et al.* as boarding-stable. Loss, $10,114. Insurance, $10,800. Originated on second floor, where the horses were kept. Cause, unknown.

Tuesday, May 13, 3.09 p. m. Box 4.

Gore street. Owned and occupied by J. P. Squire & Co. as gas works. That portion of the building damaged was in Somerville.

Tuesday, May 13, 7.32 p. m. Box 15.

No. 27 Vine street. Owned by J. L. Libby. Occupied by several families as dwellings. No loss. Cause, soot in chimney taking fire.

Thursday, May 15, 7 p. m. Still.

No. 286 Main street. Ivers & Pond's piano works. Cause, accidental automatic alarm.

Wednesday, May 21, 2.20 p. m. Box 21.

Waverly street. Owned by Edmund Reardon. Loss, $70. Insurance, $1,000. Occupied by William Seeley as dwelling. Originated in privy. Cause, child and matches.

Sunday, May 25, 9.39 p. m. Box 75.

Rear Walden street. Owned by Dennis Keefe. Loss, $323. Insurance, $500. Occupied by Dennis Keefe as barn. Loss, $377. Insurance, $700. Originated near a stove. Cause, unknown.

Saturday, May 31, 2.27 p. m. Box 26.

State street. M. E. Rideout's mill. Cause, accidental auxiliary alarm.

Saturday, May 31, 9.24 p. m. Box 25.

No. 485 Main street. Owned by C. A. Callender estate. Loss, trifling. Occupied by H. C. Brine as dry goods. Originated in the shed. Cause, gaslight setting fire to wood-work,

JUNE.

Monday, June 2, 6.31 p. m. Box 2.

Prison Point street. Owned and occupied by R. E. Price as tinsmith. Loss, $16. Insurance, $150. Cause, gasoline stove taking fire.

Sunday, June 8, 7.47 a. m. Box 41.

No. 115 Pleasant street. Owned and occupied by John Grinham as dwelling. No loss. Originated in wood-box near stove. Cause, unknown.

Monday, June 9, 7.48 a. m. Box 16.

Broadway. Owned by G. P. Carter estate. Loss, trifling. Occupied by Standard Turning Works for storage. Originated on the roof. Cause, sparks from chimney.

Monday, June 9, 2.30 p. m. Still.

No. 7 Chester street. Owned and occupied by J. J. Henderson as dwelling. Loss, $50. Insurance, $5,000. Cause, a defective chimney.

Tuesday, June 10, 4.58 p. m. Box 16.

Broadway. Owned by G. P. Carter estate. Occupied by Standard Turning Works for storage. Loss, trifling. Cause, incendiary.

Wednesday, June 11, 3.33 a. m. Box 26.

No. 463 Main street. Owned by McDowell heirs. Loss, $225. Insurance, $1,500. Occupied by M. S. Betteirs as dwelling. Loss, $200. Insurance, $800. Originated in a bedroom. Cause, supposed by the explosion of a kerosene lamp.

Monday, June 16, 10.55 a. m. Box 36.

No. 20 Pearl street. Owned by D. C. Smart. Loss, $602. Insurance, $4,000. Occupied by J. H. Kelsey as repairer of furniture. Loss, $600. Insurance, $350. Cause, explosion of a kerosene lamp used for heating glue.

Monday, June 16, 10.05 p. m. Box 9.

Rear No. 3 Short street. Owned by Jeremiah Callahan as dwelling. Loss, $60. Insurance, $1,000. Unoccupied. Cause, rats and matches.

Monday, June 16, 10.09 p. m. Box 12.

This alarm was given for the above fire. The person giving it thought an alarm had not been given.

Friday, June 20, 12.49 p. m. Box 45.

No. 85 Kinnaird street. Owned by J. H. Volt. Loss, $19. Insurance, $500. Occupied by J. H. Volt as dwelling. Loss, $66. Insurance, $200. Originated in a bedroom. Cause, defective chimney.

Monday, June 23, 8 p. m. Box 8.

No. 38 Second street. Owned by Barnes & Hall. Loss, $146. Insurance, $2,500. Occupied by A. C. Haden as dwelling. Loss, $80. Insurance, $1,000. Originated in attic chamber. Cause, breaking of kerosene lamp.

Friday, June 27, 4.45 p. m. Box 42.

Somerset street. Owned by Charles Smith. Occupied by B. G. Stocton as wagon-shed. No loss. Cause, set on fire by children.

Monday, June 30, 11.22 a. m. Box 32.

No. 192 Norfolk street. Owned by Philip Malone. Occupied by Patrick Mellen as dwelling. No loss. Cause, pan of fat taking fire.

JULY.

Tuesday, July 1, 4.20 p. m. Box 51.

No. 54 Ellery street. Owned by White Bros. Loss, $900. Insurance, $1,100. Occupied by White Bros. as barn. Loss, $300. No insurance. Owned by White Bros. Loss, $500. Insurance, $800. Occupied by White Bros. as

stable. Loss, $100. No insurance. Owned by White Bros. as dwelling. Loss, $50. Insurance, $1,600. Originated in a load of hay. Cause, set afire by children.

Wednesday, July 2, 2.20 p. m. Box 31.

No. 3 Jefferson street. Owned by E. H. Blake. Loss, $447. Insurance, $800. Occupied by several families as dwellings. Loss, trifling. No. 5 Jefferson street. Owned by William Kelley as dwelling. Loss, $50. Insurance, $1,200. No. 23 Warren street, owned by Jeremiah Hegarty as dwelling. Loss, $119. Insurance, $3,000. Originated in a shed. Cause, children and matches.

Friday, July 4, 12.44 a. m. Box 6.

Rear No. 10 Broadway. Owned by Johanna Hughes as stable. Loss, $675. Insurance, $1,000. Unoccupied. Rear No. 11 Broadway. Owned by Richard Beckett as stable. Loss, $60. No insurance. Cause, firecrackers.

Friday, July 4, 1.05 a. m. Box 93.

Cushing street. Owned by the City of Cambridge. Loss, $500. Occupied as a rifle range. Cause, incendiary.

Friday, July 4, 2.56 a. m. Box 26.

State street. Owned by M. A. Dow estate. Loss, $100. No insurance. Occupied by Thomas Marr as barn. Loss, $325. Insurance, $930. Originated in hay loft. Cause, firecrackers.

Saturday, July 5, 1.07 p. m. Box 23.

No. 56 Brookline street. Owned and occupied by Henry McCaw as dwelling and grocery. Loss, trifling. Originated in an awning. Cause, fireworks.

Wednesday, July 9, 4.31 p. m. Box 87.

Rear Concord avenue. Cause, swamp afire.

Monday, July 14, 3.36 p. m. Box 16.

Freight car on Boston & Albany Railroad. Loss, trifling. Cause, set afire by boys.

Tuesday, July 15, 3.05 p. m. Box 87.

Rear Concord avenue. Cause, swamp afire.

Tuesday, July 15, 8.36 p. m. Box 38.

No. 198 Pearl street. Owned by Edmund Reardon. Loss, trifling. Occupied by E. M. Phelan as dwelling. Loss, $35. Insurance, $3,000. Cause, gas-light setting curtain afire.

Wednesday, July 16, 2.43 p. m. Box 31.

Rear 269 Cambridge street. Owned by Michael Reagan. Occupied by Jeremiah Horigan as dwelling. No loss. Cause, wood in stove oven taking fire.

Thursday, July 17, 12.18 p. m. Box 137.

No. 32 Jay street. Owned by James Hicks. Loss, $25. Insurance, $1,000. Occupied by James Hicks as dwelling. Loss, $15. Insurance, $500. Originated in a bureau drawer where matches were kept. Cause, unknown.

Friday, July 18, 8.14 p. m. Box 31.

Portland street. Cause, burning rubbish. Alarm needless.

Saturday, July 19, 11.06 p. m. Box 41.

No. 20 Park street. Owned by J. G. Raymond. Loss, $70. Insurance, $1,000. Occupied by Henry Pearson as dwelling. Loss, $197. Insurance, $500. Originated in a bedroom. Cause, breaking of a kerosene lamp.

Sunday, July 20, 2.44 p. m. Box 6.

Deacon street. Owned by Cambridgeport Savings Bank. Loss, trifling. Unoccupied coal shed. Cause, sparks setting fire to roof.

Sunday, July 20, 4.41 p. m. Box 6.

Deacon street. Cause, rekindling of fire.

Monday, July 21, 5.09 p. m. Box 134.

No. 118 Prospect street. Owned by M. A. Barry. Loss, $120. Insurance, $3,000. Occupied by Thomas Gilmore as dwelling. Loss, $20. No insurance. Originated in a bedroom. Cause, child and matches.

Wednesday, July 30, 3.15 p. m. Still.

Beacon street. Fire in Somerville. Engine Co. No. 5 rendered assistance.

Thursday, July 31, 5.07 p. m. Box 25.

Freight car on Boston & Albany Railroad. Loss, $300. Insurance, $300. Cause, set afire by boys.

AUGUST.

Sunday, Aug. 3, 10.21 a. m. Box 64.

No. 13 Follen street. Owned by Christ Church Society. Occupied by J. F. Spalding as dwelling. No loss. Cause, soot in chimney taking fire.

Wednesday, Aug. 6, 5.39 p. m. Box 15.

No. 79 Charles street. Owned by Jane Galligher. Loss, $135. Insurance, $550. Occupied by Catharine Ross as dwelling. Loss, $275. Insurance, $1,500. Originated in a closet. Cause, child and matches.

Thursday, Aug. 7, 6.16 p. m. Box 75.

Dublin street. Owned by L. A. Robillard. Loss, trifling. Unoccupied dwelling. Originated in some old straw. Cause, unknown.

Wednesday, Aug. 13, 5.22 p. m. Box 36.

No. 573 Main street. Cause, smoke mistaken for fire.

Friday, Aug. 15, 4.33–4.42 a. m. Box 89.

Rear Concord Avenue. Owned and occupied by Parry Brothers as brick manufactory. Loss, $165. Insurance, $1,050. Originated in dryer. Cause, overheated.

Saturday, Aug. 16, 7.45 a. m. Still.

Fire in Somerville. Engine Co. No. 5 rendered assistance.

Saturday, Aug. 16, 10.28 p. m. Box 28

No. 12 Webster avenue. Owned by John McGurk. Occupied by G. F. Auford as dwelling. Loss, trifling. Cause, upsetting of a kerosene lamp.

Sunday, Aug. 17, 7.45 a. m. Still.

No. 233 Hampshire street. Owned by C. H. Pratt. Occupied by Henry Dutton as dwelling. Loss, trifling. Originated in a bedroom. Cause, child and matches.

Wednesday, Aug. 20, 9.39 p. m. Box 65.

No. 62 North avenue. Owned by A. E. Hildreth estate. Loss, $200. Insurance, $1,000. Occupied as stable. Cause, ignition of oiled rags.

Friday, Aug. 22, 8.14 p. m. Box 42.

No. 101 Western avenue. Owned by Horace Hews. Occupied by M. W. Hickey as dwelling. Loss, trifling. Cause, explosion of a kerosene lamp.

Sunday, Aug. 24, 3.26 p. m. Box 75.

Rear Walden street. Cause, smoke mistaken for fire.

Tuesday, Aug. 26, 10.58 a. m. Rox 32.

Nos. 411 and 415 Cambridge street. Owned by C. F. O'Laughlin. Loss, $1,050. Insurance, $10,000. Occupied by Morris Youngerman as furniture store. Loss, $1,200. Insurance, $1,500. Cause, kerosene lamp taking fire.

Wednesday, Aug. 27, 3.12 p. m. Box 26.

No. 382 Main street. Owned and occupied by D. C. Smart as boiler room and dry-house. Loss, $100. Insurance, $500. Originated in dry-house. Cause, sparks from furnace.

SEPTEMBER.

Monday, Sept. 1, 7 a. m. Box 53.

No. 41 Holyoke street. Owned by C. C. Little heirs. No loss. Occupied as kindergarten school. Originated in shed. Cause, hot ashes in barrel.

Tuesday, Sept. 2, 12.42 a. m. Box 8.

Second street. Owned by F. Geldowsky. Occupied by C. P. Keeler & Co. as furniture manufactory. Loss, trifling. Originated on outside of building. Cause, ignition of oiled rags.

Tuesday, Sept. 2, 6.24 p. m. Box 14.

No. 190 Cambridge street. Owned by A. A. Hadley. Occupied by James Gibson as dwelling. Loss, trifling. Originated in a mattress on outside of building. Cause, child and matches.

Wednesday, Sept. 3, 10.05 p. m. Box 46.

No. 317 Harvard street. Owned and occupied by E. D. Levitt as dwelling. Loss trifling. Originated in a barrel of shavings. Cause, ignition of oiled rags.

Saturday, Sept. 6, 5.50 p. m. Still.

No. 660 Main street. Owned and occupied by J. H. & J. P. Thayer as paint shop. Loss, trifling. Originated in a clothes closet. Cause, spontaneous combustion.

Monday, Sept. 8, 7.37 a. m. Still.

North Avenue. Owned and occupied by J. M. W. Hall as dwelling. Loss, $245. Insurance, $4,000. Cause, explosion of gas.

Saturday, Sept. 13, 9.42 p. m. Box 89.

Rear Concord avenue. Owned by Parry Brothers. Loss, $1,800. Insurance, $1,800. Occupied by Parry Brothers as brickmakers. Loss, $4,700. Insurance, $1,050. Originated in dryers. Cause, overheated furnace.

Thursday, Sept. 18, 7.08 p. m. Box 28.

Broadway. Cause, steam mistaken for fire.

Monday, Sept. 22, 12.08 p. m. Box 32.

No. 3 Lincoln place. Owned by Mason Davis. Loss, $15. Insurance, $800. Occupied by Mason Davis & Son and F. H. Teele as soap manufacturers. Originated on the roof. Cause, sparks from chimney.

Monday, Sept. 29, 8.24 a. m. Box 15.

Rogers street. Owned by Alden Speare Sons & Co. Occupied by several families as dwellings. Loss, trifling. Originated in a mattress on the roof. Cause, sparks from chimney.

Tuesday, Sept. 30, 8.30 p. m. Still.

No. 19 Gore street. Owned by Philip Leonard. Loss, $8. Insurance, $1,750. Occupied by Thomas Leonard as dwelling. Loss, $30. Insurance, $300. Originated in a bedroom. Cause, explosion of a kerosene lamp.

OCTOBER.

Wednesday, Oct. 1, 7.45 p. m. Still.

Main street. Cause, smoke mistaken for fire.

Wednesday, Oct. 1, 3.30 p. m. Still.

No. 74 Otis street. Owned and occupied by Mrs. Robert Brine as dwelling. Loss, trifling. Cause, soot in chimney taking fire.

Friday, Oct. 3, 2.32 p. m. Box 35.

No. 280 Broadway. Owned by L. G. Russell. Loss, $15. Insurance, $6,000. Occupied by A. D. Webber as barber. Cause, falling of a lighted kerosene lamp.

Tuesday, Oct. 7, 9.57 a. m. Box 12.

No. 47 North street. Owned by Lewis Hall. Occupied by John Powers as dwelling. No loss. Cause, soot in chimney taking fire.

Wednesday, Oct. 15, 2.28 p. m. Box 16.

No. 37 Harvard street. Owned and occupied by F. H. Holton & Co. as copper rolling mill. Loss, trifling. Originated in ventilator. Cause, sparks from furnace.

Monday, Oct. 27, 3.27 p. m. Box 14.

No. 27 Seventh street. Owned by Patrick Rafferty. Occupied by several families as dwellings. No loss. Cause, soot in chimney taking fire.

NOVEMBER.

Saturday, Nov. 1, 9.50 a. m. Box 89.

Rear Concord avenue. Owned by City of Cambridge. Loss, trifling. Occupied by Fresh Pond Ice Co. as ice-house. Originated on the roof. Cause, sparks from roofers' furnace.

Wednesday, Nov. 5, 2.17 p. m. Box 37.

No. 51 Pleasant street. Owned by Twenty Associates. Loss, $13. Insurance, $4,000. Occupied by F. H. Buffum as dwelling. Originated on the roof of L. Cause, sparks from roofers' furnace.

Wednesday, Nov. 19, 2.18 p. m. Box 42.

No. 213 Banks street. Owned by Zebah Hayden. Occupied by Joseph Forshman as dwelling. No loss. Originated amongst rags in the cellar. Cause, unknown.

Friday, Nov. 21, 9.55 a. m. Box 16.

No. 231 Main street. Owned by Charles Coleman. Loss, trifling. Occupied by Nathaniel White as dwelling. Originated on the roof. Cause, sparks from chimney.

Friday, Nov. 21, 11.43 p. m. Box 6.

Third street. Owned by Peter McMurray. Loss, $500. Insurance, $1,000. Occupied by Peter McMurray as carriage builder. Loss, $300. Insurance, $500. Originated in paint shop. Cause, spontaneous combustion.

Saturday, Nov. 22, 6.52 p. m. Box 32.

No. 159 Winsor street. Owned by John Boyle heirs. Occupied by William Madden as dwelling. Loss, trifling. Originated in a bedroom. Cause, careless use of candle.

Sunday, Nov. 23, 10.30 a. m. Box 56.

Divinity avenue. Owned by Harvard College. Loss, $30. Insurance, $1,000. Occupied by H. S. Clayton as dwelling. Cause, defective flue.

Sunday, Nov. 23, 1.10 p. m. Box 6.

No. 28 Pelham street. Owned by Eliza Murray. Loss, trifling. Occupied by G. P. Lynch as dwelling. Originated on the roof. Cause, sparks from chimney.

Tuesday, Nov. 25, 10.59 p. m. Box 16.

No. 37 Harvard street. Owned by F. H. Holton & Co. Loss, $362. Insurance, $6,500. Occupied by F. H. Holton & Co. as copper and brass works. Loss, $974. Insurance, $27,000. Originated in rolling mill. Cause, overheated chimney.

Wednesday, Nov. 26, 2.36 p. m. Box 12.

No. 210 Bridge st. Owned by E. T. Harrington. Occupied by Dennis O'Neill as dwelling. No loss. Originated in the cellar. Cause, unknown.

Wednesday, Nov. 26, 2.40 p. m. Still.

Nos. 232–234 Cambridge st. Owned by H. B. Dennison. Occupied by John Hedin & Son as furniture store. Loss, trifling. Cause, lighted cigar stub thrown into rubbish.

Friday, Nov. 28, 9 a. m. Still.

No. 133 Mt. Auburn street. Owned by Brackett heirs. Occupied by C. W. Brackett as dwelling. No loss. Cause, soot in chimney taking fire.

Sunday, Nov. 30, 11.19 p. m. Box 72.

Dudley street. Owned by E. D. Badger. Loss, trifling. Occupied by Clark Coffee Co. as coffee roasting and grinding. Originated in the floor under coffee roaster. Cause, the floor was not properly constructed.

FIRE ALARM TELEGRAPH.

LOCATION OF BOXES.

2. Prison Point st., cor. Bridge.
4. Gore st., J. P. Squire's Works.
6. Third st., cor. Broadway.
6. W. B. Bridge, Transfer Station (duplicate).
7. Third st., cor. Bent.
8. Thorndike st., cor. Third.
9. Cambridge st., near First.
10. Thorndike st., near First.
12. Third st., cor. Winter.
12. North st., cor. Water (duplicate).
13. Fourth st., Engine House No. 3.
14. Sixth st., cor. Cambridge.
15. Vine street, cor. Fifth.
16. Broadway, Greely's Mill.
17. Washington st., cor. Brewery.
21. Sydney st., cor. Allston.
23. Pearl st., cor. Auburn.
24. Brookline st., cor. Valentine.
25. Lafayette sq.
26. Main st , cor. Osborn.
27. Clark st., cor. Harvard.
28. Broadway, near Brewery.
29. Webster ave., cor. Plymouth st.
31. Cambridge st., cor. Harding.
32. Columbia st., cor. Cambridge.
34. Hampshire st., cor. Columbia.
35. Harvard st., cor. Norfolk.
36. Main st., cor. Prospect.
37. Junction Pleasant and River sts.
38. Magazine st., cor. Lake.
39. Magazine st., cor. Chestnut.
41. Pleasant st., cor. Fairmont.
42. Blackstone st., opp. Riverside Press.
43. Banks st., cor. Flagg.
45. Franklin st., cor. Soden.
46. Main st., cor. Hancock.
47. Broadway, cor. Antrim.
48. Inman sq., Engine House No. 5.
49. Cambridge st., cor. Baldwin.
51. Broadway, cor. Ellery st.
52. Junction Main and Mt. Auburn sts.
53. Mt. Auburn st., cor. Holyoke pl.
54. Cambridge st., Memorial Hall.
56. Kirkland st., cor. Sumner.
57. Oxford st., cor. Mellen.
59. Harvard sq., cor. Brattle st.
61. Brattle sq., City Building.
62. Mt. Auburn st., cor. Hilliard.
63. Junction Brattle and Mason sts.
64. Junction Concord ave. and Garden st.
65. North ave., cor. Shepard st.
68. North ave , near Railroad Bridge.
69. North ave., cor. Day st.
71. North ave., near Tannery.
72. Cedar st., cor. Dudley.
73. Spruce st., near Bay State Brick Yard.
74. Dublin st., cor. Railroad.
75. Walden st., cor. Raymond.
76. Walnut ave., cor. Arlington st.
78. Concord ave., cor. Sparks st.
79. Brattle st., cor. Sparks.
82. Brattle st., cor. Appleton.
83. Brattle st., cor. Elmwood ave.
87. Lake View ave , near Concord ave.
89. Concord ave., near Hittinger's Ice House.
92. Mt. Auburn st., near Railroad Stable.
93. Locust st., cor. Cushing.
114. Ninth st., Goepper Bros. Barrel Factory.
116. Broadway, Tower's Piano Key Factory.
121. Brookline st., cor. Chestnut.
125. Green St., F. A. Kennedy's Cracker Bakery.
126. Pine st., cor. Washington.
134. Tremont st., cor. Hampshire, City Stable.
135. Harvard st., opp. Bigelow.
137. Western ave., cor. Howard.
152. Junction Main and Bow sts.
158. Oxford st., cor. Harris.
165. North ave., opp. Linnæan st.
167. Linnæan st., cor. Avon.
168. North ave., Engine House No. 4.
216. Ninth st., Rubber Factory Yard.
223. Morse & Whyte's, 10 Franklin st.
228. Curtis Davis & Co.'s Soap Works, Broadway.
242. Albro st., Electric Light Works.
264. Cambridge Observatory.
271. North ave., Railroad Stable.

REPORT

OF THE

CHIEF OF POLICE.

To the Honorable the Mayor and the City Council of the City of Cambridge: —

GENTLEMEN: In compliance with the city ordinance, I have the honor to present my annual report of the work of the Police Department for the year ending November 30, 1890.

The whole number of arrests for the year has been one thousand seven hundred and seventy-three (1,773) against 1,544 last year.

Males	1,584
Females	189
Adults	1,423
Minors	350
Non-residents	222

The offences for which arrests have been made are as follows:

Assault and battery	193
Assault, felonious	10
Assault on officer	7
Assault, indecent	1
Attempt to rape	1
Adulterated milk	8
Adulterated food.	4
Bastardy	9
Breaking and entering	34
Capias	2
Common drunkards	17
Common nuisance	2
Cruelty to animals	4
Concealing mortgaged property	1
Contempt of court	1
Disturbing the peace	94
Amount carried forward	388

Amount brought forward	388
Drunkenness	786
Disorderly conduct	18
Disturbing public schools	2
Delirium tremens	3
Disturbance in street car	6
Default warrants	5
Embezzlement	4
Escaped prisoners	11
Exposure of person	2
Forgery	1
False pretence	10
Insane	36
Idle and disorderly	10
Keeping unlicensed dog	3
Keeping disorderly house	2
Larceny	140
Lewd and lascivious	5
Liquor nuisance	46
Malicious mischief	29
Non-support	20
Neglected children	5
Obstructing a horse car	1
Obstructing a railroad train	1
Obstructing an officer in discharge of duty	1
Obscene pictures	1
Polygamy	1
Peddling without a license	16
Profane language	4
Passing counterfeit money	1
Rape	1
Receiving stolen goods	1
Robbery	3
Rude and disorderly conduct	1
Safe-keeping	4
Stubborn children	20
Stealing a ride	1
Suspicious persons	11
Suspicion of murder	3
Surety of the peace	12
Truants	6
Ticket of leave	1
Vagrants	15
Violating city ordinance	74
Violating liquor law	26
Violating Sunday law	5
Violating health ordinance	5
Using indecent language	1
Wilful trespass	24
Walking on railroad track	1
Total	1,773

Whole number of lodgers	169
Males	160
Females	9
Adults	160
Minors	9
White	165
Colored	4

Amount of property reported stolen	$5,469 50
Amount of property reported recovered	4,249 50

Miscellaneous Business.

Accidents reported	113
Buildings found open and secured	293
Cases investigated	839
Dangerous buildings	2
Dead bodies found	7
Defective cesspools	19
Defective drains and vaults	6
Defective gas pipes	9
Defective water pipes	53
Defective hydrants	7
Defective lamps	1,212
Defective streets and sidewalks	648
Disturbances suppressed	364
Dogs killed	118
Extra duties done by officers (days)	331
Fire alarms given by officers	20
Fires extinguished without alarms	7
Intoxicated persons helped home	14
Lost children restored	223
Sick and injured persons assisted	61
Stray teams put up	56
Street obstructions removed	26
Water running to waste	52

City Property in Use by Police Department.

105 badges	$150 00
100 billies (short)	50 00
150 billies and belts	225 00
8 books	26 00
2 bookcases	12 00
Bedding and blankets	30 00
2 brooms	50
2 bureaus	3 00
1 buggy	200 00
4 bedsteads	12 00
8 clocks	30 00
2 cots and beds	3 00
Amount carried forward	$741 50

Amount brought forward	$741 50
50 chairs	40 00
3 coal hods	1 00
4 carpets	25 00
1 copying machine	8 00
8 desks	150 00
2 dust pans	50
3 horses	600 00
3 harnesses	100 00
2 horse blankets	6 00
1 hat rack	50
3 halters	1 00
1 ice hatchet and tongs	1 00
20 lanterns	20 00
1 letter scale	75
4 lounges	25 00
8 mirrors	14 00
12 mats	50 00
3 maps	1 00
3 oil cans	1 00
13 pairs of handcuffs	35 00
1 police van	350 00
1 patrol wagon	400 00
1 pair of runners	5 00
76 revolvers	500 00
Ropes and stakes	15 00
3 robes	15 00
1 rogues' gallery	150 00
2 straps and weights	75
4 slates	75
12 spittoons	3 00
1 sleigh	40 00
4 stretchers	6 00
3 saddles	12 00
1 safe	200 00
2 stoves	20 00
3 thermometers	75
1 telephone line	300 00
25 tin dippers	2 50
12 towels	2 50
8 tables	24 00
3 umbrella stands	2 00
6 waste baskets	2 00
4 water coolers	4 00
4 water pails	1 00
1 wagon jack	1 00
1 wardrobe	10 00
2 wash bowls	75
1 wagon van (old)	30 00
Total	$3,919 25

Total cost of Department for the year	$94,872 37
Appropriation and estimated revenue	$96,285 72

Expenditures.

Badges	$6 00
Books	70 50
Boarding horses	564 00
Blankets	15 25
Buttons	50 00
Carriage hire	34 00
Cambridge Gas Light Co.	727 53
Cleaning Station No. 3	114 00
Clipping horse	3 00
Cloth for the Department	360 57
Directories for the Department	22 00
Fresh Pond Ice Co.	32 31
Gamewell Co. (Signal System)	5,052 50
Hay and grain	18 10
Horses (2)	500 00
Insurance on new wagon	2 75
Incidentals	61 61
Legal services	48 00
Medicines	1 80
Medical attendance	35 00
Medicine chest	10 00
New buggy	250 00
New harnesses (2)	162 15
New patrol wagon	433 25
Printing	41 46
Photographs for rogues' gallery	7 00
Policemen, services of	79,379 07
Repairs on wagons	99 50
Repairs on harnesses	2 67
Repairs on new patrol wagon house	521 48
Salary of Chief of Police	1,700 00
Salary of captains	3,744 00
Shoeing horses	49 27
Supplies for Stations	400 45
Supplies for Signal System	96 15
Telephone Co.	135 60
Travelling expenses	121 40
Total	$94,872 37

Expenditures	94,872 37
Receipts	5,285 72
B alance, showing actual cost	89,586 65
Balance unexpended	1,413 35

The organization of the force consists of a chief, three captains, ten sergeants, and sixty-six patrolmen. One sergeant and

sixteen patrolmen are on duty in the day time, including one patrolman who has charge of Police Station Five. Two sergeants are detailed as inspectors. During the night time there are seven sergeants and fifty patrolmen on duty; one as house sergeant at Station One; six sergeants, two in each police district, one with each relief. The night sergeants at District Two come on duty with their respective reliefs, but stop in the station to take charge of the police signal system; two patrolmen as house officers in Stations Three and Five, two patrolmen in the patrol wagon house, and forty-six officers divided into two reliefs.

During the past year there has been one officer resigned from the force, Thomas S. Hall; and two appointments made under the civil service rules, Edward J. Comerford and Dexter Jewett, thereby increasing the force one man.

We have lost by death one of our old and efficient officers, Amos Jones, of Station Three, who was appointed on the force in 1869, and during the twenty-one years of police service he has been a faithful and efficient officer. He died at his home very suddenly on the night of November 30, after going home from his day's work. The death of Officer Jones leaves a vacancy of one man in the force.

At the introduction of the Police Signal System I recommended to the Committee on Police that all female prisoners be taken to Station One, therefore doing away with one matron. The Committee sustained the recommendation and the order was carried out; and the matron of Station Two was dropped from the pay-rolls.

As in former years under the no-license law, a determined effort has been made to suppress the illegal sale of intoxicating liquors. Difficulties attend the enforcement of the liquor law; to obtain evidence is very difficult, as the illegal sale of liquors is now made in what we term kitchen bar-rooms. Good citizens who would assist an officer in any other matter, decline to make any disclosures in regard to the sale of liquors. It is therefore obligatory on the officers to depend on their own observations for evidence to convict a person of a violation of the liquor law. Officers are very often satisfied in their own minds that illegal sales of liquors have been made, but the same evidence that satisfies them and other people would not satisfy a court or jury.

During the past year we have also seized, confiscated, and

turned over to the Chief of the Massachusetts District Police, a quantity of liquors.

As regards furnishing cloth to members of the force, I find the result is that I now have my officers all uniformed alike. The money received from the sale of cloth has been turned in to the city treasurer, and I now have cloth on hand to the amount of one hundred and twelve dollars.

I would suggest to your Honor and City Council the advisability of taking some action in the matter of pensioning some of our old and faithful officers.

I would also recommend an increase of the force of seven men, three for the new Harvard Bridge, two for route 16 now covered by the officers on the adjoining routes, one for the Belmont district, and one for route 12 now covered by a special officer.

I also recommend the further adoption of the Police Signal System throughout the city. The Gamewell Company have wired and placed thirty signal boxes throughout Police District Two, which have been in working order since the first of October. I feel that with the further adoption of the Police Signal System throughout the city, and the increase of force as recommended, we should have a very efficient police force, and our city would be as well protected as any city in the Commonwealth.

I would call the attention of the City Council to the inadequate quarters now occupied by the police of the Third District.

In submitting my report I desire to tender my thanks to His Honor Mayor Gilmore, and to you, gentlemen of the City Council, and especially to thank the gentlemen comprising the Committee on Police; also His Honor Judge Sanger, Mr. Walter W. Pike, City Clerk; City Solicitor Charles J. McIntire, District Attorney P. H. Cooney, and Assistant District Attorney Pevey, for their counsel and friendly advice. To them I feel under great obligations, and also to the members of the force for the prompt and efficient manner in which they have discharged the duties of their office.

In closing, I have simply to say that I have endeavored to discharge the duties of the office faithfully, economically and impartially. I have the honor to be, gentlemen,

Your obedient servant,

LOTHROP J. CLOYES,
Chief of Police.

REPORT

OF THE

PROBATION OFFICER.

CAMBRIDGE, December 1, 1890.

To His Honor the Mayor and the Board of Aldermen:—

GENTLEMEN: I herewith submit my report as Probation Officer for the year ending November 30, 1890.

In the performance of my duties I have investigated as far as possible the cases of all persons under arrest, awaiting trial for violating the criminal laws of the Commonwealth or the City ordinances. I have also been in attendance at the daily sessions of the District Court. When, in the judgment of the Court, it has been deemed best to continue a case upon probation, the person before leaving the court room receives a document giving the terms and conditions on which he is to be released, also the date upon which he will be required to again present himself at court. A report is then given as to what his conduct has been during his term of probation. If his conduct has not been satisfactory, he is then liable to be sentenced; or, as is sometimes the case, his term of probation is continued. If, on the other hand, he shows by his conduct that he has abandoned his evil ways, his case is placed on file and no penalty imposed.

Complaints for non-support of families, or for common drunkenness, are sometimes made by friends or relations for the purpose of having them placed on probation and thus be held responsible by the Court for their conduct. The Probation Officer has often brought about an entire reformation in such cases, and been the means of placing such families in a much better condition.

My rule has been to require every one placed on probation to personally report to me once in two weeks, and oftener if necessary. By this means, and by visiting their friends and homes,

I can keep myself informed as to their conduct. I have endeavored, by giving them words of encouragement and sympathy, and sometimes of warning, to lead them to live lives of honesty and sobriety.

The law relating to the release of persons serving a term of imprisonment in the House of Correction by recommendation of Probation Officer is intended no doubt to apply to such cases only where there are good reasons for believing that evil habits and associates will be abandoned and an earnest effort made to obtain an honest livelihood. This fact I have always borne in mind when making investigations of such cases. In every case the recommendation of the Probation Officer must be concurred in by the Court before whom the case was originally heard, and the person then only can be released upon the action of the Board of County Commissioners. It is gratifying to me to know that no recommendation ever made by me was refused, and still more gratifying that of the nineteen persons released during the six years of my service as Probation Officer but one, as far as I know, has ever been again charged with any misdemeanor or violation of the law.

Probation work during the year ending November 30, 1890:—

Whole number of cases investigated	1230
Number of persons on probation Nov. 30, 1889	36
Number of persons placed on probation during year	121
Number of persons in care during the year	157
Number of cases disposed of	134
Number remaining on probation Nov. 30, 1890	23

Results of cases disposed of:—

Discharged for good behavior	102
Conduct fair, discharged	7
Sent to relatives	4
Sentenced	12
Ran away to escape sentence	9

Nativity.

Born in Cambridge	28
" " other parts of United States	51
" " British Provinces	6
" " Ireland	28
" " England	6
" " Scotland	1
" " Norway	1

Offences.

Assault and battery	17
Breaking and entering (boys)	4
Common drunkenness	9
Drunkenness	57
Disturbing the peace	4
Disturbing a school	1
Exhibiting obscene pictures	1
Idle and disorderly	1
Larceny	8
Non-support of family	3
Surety of the peace	3
Stubborn and disobedient children	4
Violation of city ordinance	2
Wilful trespass	7

Age, Sex, etc.

Adults	81
Minors	40
Married	58
Single	63
Males	109
Females	12
Dependent children under 16 in families of the married persons	138

Applications for release from House of Correction :—

Number investigated	7
Recommendations for release granted	4
No recommendation made	3

Occupation.

Clerks and salesmen	8
Currier	1
Carpenters	3
Coopers	2
Employed in manufactories	15
Housework	12
Laborers	22
Masons	3
Paper-hanger	1
Printers	5
Railroad employés	4
Shoemakers	2
Stone-cutter	1
Teamsters and drivers	14
Scholars	24
Tailor	1
No employment (minors)	3

I desire to express to Hon. Chester F. Sanger, Judge of the District Court, my thanks for the evident interest he has taken in my work, and for the courtesy I have received at his hands; also to the members of the police force, who have been ever ready to furnish information or assistance when called upon so to do.

Respectfully submitted,

FREDERICK W. HAGAR,
Probation Officer.

REPORT

OF THE

BOARD OF HEALTH.

In compliance with the public statutes creating Boards of Health and defining their duties, we have the honor to make our annual report for the year ending December 31, 1890.

We respectfully call the attention of your honorable body to the following list of complaints and nuisances investigated during the year:—

Full, overflowing and offensive privy-vaults	496
Open, defective and leaky privy-vaults	84
Filthy and defective privy houses	55
Offensive and defective water-closets	48
Swill and garbage thrown into privy-vaults	22
Offensive and obstructed sluice-vaults	18
Privies on or near line	17
No proper privy vaults	5
Full and defective cess-pools and catch-basins	96
Defective drainage, open and broken drains, etc.	159
No traps under sinks	19
Leaky and defective traps	18
Leaky and defective sinks and bowls	21
Filthy yards	124
Swill, garbage, ashes, etc., in cellars and sheds	51
Filthy stables and cow-sheds	39
Manure in yards and on lots	55
Wet and damp cellars	51
Stagnant water on premises	47
Swine kept on premises	5
Miscellaneous	121
Total	1,551
Number of inspections made	1,756
Number of subsequent inspections	1,398
Total	3,154

Number of notices issued and recorded		791
Number of second notices issued		22
Number of special notices issued		93
Number of verbal notices given		201
Copies of regulations of the board issued		205
Orders of the board served by constable		61
Complaints received and investigated		295
Complaints sustained	289	
Complaints not sustained	6	
Vaccinations and re-vaccinations		441
Rooms fumigated		110
Number of notices for treatment of contagious diseases sent out		424
Number of visits to premises where contagious diseases occurred during the year		402

In a majority of cases compliance with the orders of the Board has been prompt and satisfactory, showing a disposition to do what is thought necessary for public health. Another good indication is the decrease in the number of factitious complaints, which always cause much annoyance and waste valuable time.

The Board would call attention to the following act of the legislature of this Commonwealth, which was accepted by the City Council of this city May 15, 1890 :—

CITY OF CAMBRIDGE,
IN BOARD OF ALDERMEN, May 6, 1890.

Resolved, That Chapter 74 of the Acts of the year 1890, entitled "An act in relation to the preservation of the Public Health in Cities," approved March 6, 1890, be and hereby is accepted by the City Council of the City of Cambridge, the same being as follows:

[CHAP. 74.]

AN ACT IN RELATION TO THE PRESERVATION OF PUBLIC HEALTH IN CITIES.

Be it enacted, etc., as follows:

SECTION 1. No privy vault shall be established in a city which accepts this act, either upon premises situated on a public or private street, court or passage-way where there is a public sewer opposite thereto, or upon premises connected with a public or private sewer, without permission in writing first obtained from the Board of Health of such city. And whenever there is in such city a privy vault so situated which, in the opinion of the Board of Health of such city, is injurious to the public health, said Board shall declare the same to be a nuisance, and forbid its continuance; and sections twenty-one to twenty-three inclusive of chapter eighty of the Public Statutes shall apply to such nuisances so declared.

SECTION 2. This act shall take effect in any city of the Commonwealth when accepted by the city council thereof. [*Approved March* 6, 1890.

Adopted. Sent down for concurrence.

Attest, WALTER W. PIKE, *City Clerk*

In Common Council, May 13, 1890. Concurred.

Attest, EDWARD J. BRANDON, *Clerk.*

May 15, 1890. Appproved,

HENRY H. GILMORE, *Mayor.*

A true copy. Attest,

WALTER W. PIKE, *City Clerk.*

This act gives the Board a power of which it has long felt the need, and it is a measure the judicious enforcement of which cannot fail to be beneficial to the public health of this city. Thus far the Board has been very lenient in enforcing this statute, recognizing the people's lack of familiarity therewith; but it has no intention to continue such leniency in the future. No private interests must be allowed to stand in the way of the health of the city at large. Since the acceptance of this statute the Board has ordered the removal of 46 privy vaults, 31 of which orders were complied with more or less readily. In 11 cases an extension of time was granted for reasons satisfactory to the Board. In 4 cases the Board was obliged to resort to the court to enforce its order. In one of these four cases the nuisance was abated by the abolition of the vault, but as the owner of the property would not substitute any arrangement in its place, and the occupants were using the open yard as a privy, the Board being satisfied that the building was unfit for habitation and a cause of nuisance to the public, notified the occupants to quit the premises, and notified the owner that the premises, owing to their insanitary condition, were unfit for occupation. The building remains vacant at the present time.

Niles's slaughter-house still maintains its position on the border of Fresh Pond, and while maintaining that position is a possible source of danger to the water supply of the city. This source of danger is inseparable from the business, no matter with how much care it may be carried on, and can only be guarded against by eternal vigilance. Furthermore, this place is situated on a road which, we are led to believe, is to form part of a much frequented drive, the attractions of which will certainly not be increased by the disgusting odors poured forth into the atmosphere from a slaughter-house. Next to pure air in importance to mankind, and hardly inferior thereto, is pure water.

Beauty is pleasing everywhere, but among earthly things we shall rarely find a better than health.

The rebuilding of the rendering works of J. C. Dow & Co., on Portland street, which were burned a short time before, has led the Board to consider the wisdom of allowing the continuance of this business on its present site. While the Board has reason to think that this place has in times past been so con

ducted as to be a source of annoyance to those living in the vicinity, if it can by the use of improved appliances, and by the exercise of intelligent supervision, be so carried on that no nuisance shall arise therefrom, it should not be interfered with. It is the opinion of the Board that rendering works can be so carried on. Should the result in this particular case not justify this opinion, the Board will not hesitate to condemn the continuance of said works on their present site.

The work of filling up the wet lands in East Cambridge, lying west of First street, has not proceeded as rapidly as is desirable. The proper authorities should insist on greater activity in this matter, and not allow the past condition of this locality to continue through another summer.

The inquiry prosecuted by us under the authority of the City Council by order approved May 20, 1887, and in concurrence with the Board of Health of the City of Somerville, resulted in the determination of the particular estates in Cambridge and Somerville which caused the chief part of the nuisance at the present outlet of the Bridge street sewer. In our report to the City Council of our doings for 1887 will be found the report to us of Dr. Holt and City Engineer Barbour, who prosecuted these investigations under our direction. They state in response to the fifth inquiry that as the proposed plant of the Metropolitan Sewage Commission "is still in embryo, of course we have had no opportunity for observation in this direction, but we can say generally that any plan that will take the discharges from this sewer and carry them somewhere else will permanently abate the nuisance."

We now take up this important matter with the hope that in the near future we may see applied this permanent remedy.

Some preliminary conferences have indicated that early in the year 1891 would be seasonable time for the determination of the plan by which the sewage in the Bridge street sewer will be intercepted and taken "somewhere else." We are convinced that the good health of this community requires that the sewage which comes from the great rendering establishments of Cambridge and Somerville should be carried without delay or intermission to the adopted outfall. No amount of rainfall or melting snow entering this sewer will make the mixed sewage fit to discharge under the great highway from East Cambridge

to Boston. We believe that a separate sewer should be built from these works to the great intercepting sewer in or near Medford street, and that their sewage should never be allowed to pass upon the flats of Charles River.

We therefore recommend that a conference be arranged between the sewer committees of Cambridge and Somerville, and that a plan in harmony with these views be presented to the Metropolitan Sewage Commission and urged upon them for adoption.

The health of the city during 1890 was good, so far as the mortality is an indication of that fact. The number of deaths, exclusive of still-births, reported was 1,194, 91 less than in the preceding year.

The following table gives the numbers of the sexes dying in certain age groups:—

Deaths in 15 Age Groups.

Ages.	Under 1....	Under 2....	Under 3...	Under 4....	Under 5....	Total Under 5....	Under 10..	Under 15...	Under 20...	Under 25...	Under 35...	Under 45...	Under 55...	Under 65...	Under 75...	Over 75....
Males.....	152	32	12	9	6	211	17	11	21	28	49	50	60	41	42	38
Females.....	142	51	12	7	5	217	16	7	28	22	53	48	46	67	67	55
Total.....	294	83	24	16	11	428	33	18	49	50	102	98	106	108	109	93

The Eleventh Census of the United States places the population of Cambridge at 70,028.

The mortality for the year, based on these figures, was 17.05 per 1000 persons living. In the number of deaths given above are included those of six persons who were non-residents. It is a well recognized fact that the mortality is largely influenced by the age and sex distribution of the population, which, it was hoped, might be given in this report. They have not, however, been made out at the Census Office in Washington in time for this purpose.

The following table has been compiled from data courteously placed at the service of the Board by the Census Office, and by the City Engineer, Mr. L. M. Hastings. The area is given in

acres, and applied only to the inhabited parts of the wards, marsh lands and land covered by water being omitted. The density is the number of persons to the acre. A few deaths,—15—are not included, 6 of these being non-residents, and of the remaining 9 the returns only stated that the deceased persons were residents of Cambridge. The number, however, is too few to affect the results appreciably.

Ward.	Area.	Population.	Density.	Deaths.	Mortality per 1000 living.
1	1080.3	12,811	11.8	179	13.9
2	463.3	19,172	41.3	342	17.8
3	250.0	12,761	51.0	246	19.2
4	463.3	16,994	36.6	279	16.4
5	652.1	8,290	12.7	135	16.2

This table is given only as a matter of curiosity, the absence of the age and sex distribution depriving it of what value it would otherwise have had.

Phthisis, which is but one form of tuberculosis, retains its fatal preëminence, causing 168 deaths, 14 per cent. of the deaths occurring at all ages. Diarrhœal diseases caused 108 deaths among children under 5 years of age, 25 per cent. of all the deaths occurring at those ages.

Diphtheria.

There were reported during the year 157 cases, a decrease of 194 cases from the previous year. The distribution of the cases was as follows: Ward 1, cases 23; Ward 2, cases 48; Ward 3, cases 27; Ward 4, cases 46; Ward 5, cases 13. The number of deaths was 33, a decrease from last year of 71; of the reported cases 120 were under 10 years of age. The highly communicable nature of this disease cannot be better illustrated than by the following condensed account of an epidemic occurring in three adjacent villages in Dorsetshire, England, during the end of 1889 and the beginning of 1890, by H. G. Lys, M. D.:—

In an aggregate population of 2,300, there occurred 110 cases. The first to be affected were some children to whose home a

woman had come from a house where there had been bad throats; she herself looked ill. No source of the disease other than this woman was discoverable. The sanitary condition of the villages was excellent. The water supply mainly from wells in a chalk stratum, was abundant, and the users of each and every supply were attacked indifferently. No deficient drainage or offensive collection seemed to be in any way connected with the distribution of the disease; nor was any such discoverable. A minute examination of the milk supply proved that it was free from fault. In more than 90 per cent. of the cases intercourse with the infected persons was demonstrable. Personal infection only was the means of the first introduction, and of the wide distribution. The fact is emphasized that such epidemics as this one may occur without the coexistence of any insanitary condition, and with an activity equal to that of scarlet fever and of small-pox in days of old.

Scarlet Fever.

There were reported during the year 189 cases, an increase of 73 cases from the previous year. The distribution of the cases was as follows: Ward 1, cases 35; Ward 2, cases 62; Ward 3, cases 26; Ward 4, cases 44; Ward 5, cases 22. The number of deaths was 11, an increase of 4 over last year. Of the reported cases 159 were under 10 years of age.

Much ignorance of the highly contagious nature of this disease and of the persistence of its cause still exists. Two children of one family in this city were attacked by scarlet fever, one of whom died. The clothing of the deceased child was offered to one of the managers of a Home for Orphans with the request that it be forwarded to the Home. This offer being declined, it was proposed to send the toys. In this connection the often quoted case of Von Hildenbrand may be called to mind. He, without the agency of scarlatinous surroundings, became infected by wearing a coat which had been worn formerly upon visits to scarlatinous patients, and had been stowed away for one year and a half.

Typhoid Fever.

There were reported during the year 76 cases, a decrease of 124 cases from the previous year. The distribution of the cases

was as follows: Ward 1, cases 19; Ward 2, cases 27; Ward 3, cases 5, Ward 4, cases 13; Ward 5, cases 12. The number of deaths was 17, a decrease of 8 from last year. Though the cases of this disease have been few during 1890, we must not be lulled into content with any fancied security, but must strive for a regular, thorough inspection of our water supply from its *sources* to its final distribution. And this applies with peculiar force to Stony Brook and to the water-shed from which its tributaries arise.

Influenza.

The influenza epidemic of 1889–90 was most fatal in Cambridge during the month of January, 13 deaths, out of a total of 16 credited to this cause, occurring in that month. Though there are no data in the possession of the Board by which the exact number of those affected can be determined, a large part of the community must have suffered from the disease in one or another of its forms. The following table explains itself. The cause of death is given exactly as certified in the death return. The affections to which the increased mortality of January was due appear to have been phthisis, pneumonia and bronchitis. Of the 13 deaths from influenza, 6 were of males and 7 of females. All occurred in persons between 25 and 83 years of age. The ages of the males ranging between 25 and 59, of the females between 40 and 83. 3 of the males and 6 of the female deaths, a total of 9, were of persons over 45 years of age; a time of life when degenerative changes have probably begun in the majority of persons:

Certain Deaths in 1890.

Sex.	Age.	Died.	Cause of death.
M.	25 years.	Jan. 5.	*La grippe.*
M.	35 "	" 5.	Influenza, congestion of lungs.
F.	59 "	" 7.	Broncho-pneumonia following influenza.
F.	55 "	" 8.	Influenza and debility.
M.	50 "	" 8.	Heart-failure, *la grippe.*
F.	50 "	" 8.	Influenza and pneumonia.
M.	51 "	" 8.	*La grippe.*
M.	58 "	" 11.	Fatal syncope following *la grippe.*
F.	40 "	" 13.	Influenza followed by pneumonia.
M.	40 "	" 16.	*La grippe* complicated with cerebral menin-[gitis.
F.	82 "	" 19.	Old age and influenza.
F.	72 "	" 25.	Influenza followed by heart failure.
F.	57 "	" 28.	Asthenia following influenza.
F.	4 months.	Apr. 12.	Heart failure, probable sequel to *la grippe.*
F.	21 "	May 2.	Influenza.
F.	27 years.	" 23.	Anæmia following an attack of influenza.

The total number of deaths in January was 144; of which 14 were due to bronchitis, 24 to pneumonia, 23 to phthisis. Of the other diseases, diphtheria, which had been prevalent through 1889, was the only one to present double figures; 10 deaths being credited to it. The following calculation shows approximately how the mortality of January, 1890, compares with the average mortality occurring in the same month for the ten years 1880 to 1889 inclusive.

The population of Cambridge in 1880 is given as 52,669; in 1885, 59,658; in 1890, by the census just taken, 70,028. For the present rough estimate the average population for the ten years that are being considered may be taken as 60,785. In the months of January of these ten years, phthisis has caused 157 deaths, 15.7 yearly; pneumonia 119 deaths, 11.9 yearly; bronchitis 51 deaths, 5.1 yearly. For this average January, then,

during these ten years, the deaths per thousand persons living have been, phthisis 0.25, pneumonia 0.19, bronchitis 0.08. In January, 1890, these same diseases caused the following mortality per thousand living: Phthisis 0.33, pneumonia 0.34, bronchitis 0.20.

So closely in the minds of many persons are the ideas of filth and disease associated that it seems difficult for them to form a conception of any other cause for disease than filth. The term "filth diseases," is a very popular one with most of us. On the whole it is well that such a misconception should exist among the people at large. Filth is under all circumstances a most dangerous surrounding for man and beast. Those exposed constantly to it are liable to a deterioration of the general health rendering them more susceptible to the causes of many diseases, and impairing their power of resisting the evil effects of any disease they may contract. By every means clear away all filth thoroughly; though perhaps not the immediate cause of many diseases, it is a powerful ally of them all. If, however, by the term "filth diseases," we mean that these diseases are originated by filth, and that if what is popularly known as filth is removed, we may rest secure in the confidence that we are exposed to no danger of contracting the diseases so named, then is our confidence misplaced, and the feeling of security based thereon will lead sooner or later to disastrous results. Objectionable then as filth is, do not let us be led into the error of attributing to it evils which are to a great degree independent of it. It is from this point of view that we must consider the microbic diseases. Filth is a soil in which disease germs flourish, but they also thrive in substances which can not be regarded as filth by any stretch of the imagination. As a soil in which they thrive, and as a vehicle for their conveyance, there is probably not one which can surpass so necessary an article of food both to old and young, as milk. In the language of the bacteriologist, milk is one of the best "culture media" for nearly every species of germ, harmless as well as disease-producing. We must not expect that milk containing pathogenic germs shall make its dangerous nature known to the sight or the sense of smell. As the most deadly sewer air may be without odor, so may milk bearing disease germs be without any property that shall give warning to the senses of its noxious qualities.

In recent years a number of epidemics of typhoid fever have been traced to the milk supplied from farms where this disease existed. Last July the attention of the Board was called to a milk dealer's place in Cambridge, where a case of typhoid fever existed. The patient was being nursed by a woman who was, in addition to her duties about the sick person, engaged in milking the cows and washing the cans. This dangerous combination occurring within their jurisdiction, the Board was able to interfere and put a stop to such proceedings; but let such a case happen at one of the dairy farms outside of Cambridge and who shall say it may not occur at any moment! and every one supplied with milk from this farm is in imminent danger. It is not enough for us to know that the most scrupulous cleanliness is exercised about everything that comes in contact with the milk. We should also have information whenever there is a case of typhoid fever at the farm from which the milk comes, and power to prohibit the sale of this milk in our city, unless such precautions are taken at the farm as the Board may see fit to impose. With scarlet fever and diphtheria as with typhoid fever, milk may be the vehicle whereby the exciting causes of these diseases are transported, and a number of epidemics originating in this way have been reported. In connection with scarlet fever and diphtheria, however, a much more serious question arises than in the case of typhoid fever. In typhoid fever, milk was only the means by which the germ of that disease was conveyed, but with the other diseases some recent investigations point towards the fact that not only is the milk a receptacle for the germs accidentally deposited therein from a case previously existing in a human being, but that the cow itself may be affected with diseases similar to if not identical with scarlet fever and diphtheria, and that the milk contains the exciting causes of these diseases before it has been obtained from the cow. Here opens a wide field for investigation, wherein the apparent facts are worthy of thorough and dispassionate consideration. Conclusions should not be drawn prematurely, nor should any evidence emanating from a trustworthy source be ignored. It appears from some investigations that cows which have not been exposed to scarlet fever in the human being may develop a disease which renders their milk capable of causing scarlet fever in man. So high an authority in sanitary matters as Dr. James

B. Russell, Medical Officer of Health of the City of Glasgow, says, "My own opinion is that the evidence adduced proves conclusively that milk may acquire the power to impart scarlet fever independently of the intervention of a human source." Investigations now being conducted will, it is hoped, settle this question definitively before long.

There has been, and still is in some quarters, a belief in a connection between certain ill-defined insanitary conditions, and also dampness of soil, and diphtheria, of a causal kind. As secondary causes, every condition that impairs health may conduce to the contraction of diphtheria as to that of most other diseases, but for a clear understanding of the etiology of this disease, something more is needed. A limited number of epidemics have been traced to the milk supply. Was the milk in these cases merely the vehicle by which the cause of the disease, acquired from an outside source, was transported, or is there reason to think the cow may play a similar rôle here to that it seems to play in scarlet fever? Where all is so obscure the following experiments of Klein are worth consideration. This is not the proper place for a long detail, and a few extracts will serve the present purpose. On various occasions during the last three years, Dr. Klein received information from health officers of a relation existing between a disease in cats and human diphtheria.

Cats were taken ill with a pulmonary disease, and while ill were nursed by children, who then sickened with very marked diphtheria; or children were ill with diphtheria and at the same time, or afterwards, the cats sickened. The disease in the cats was described as an acute lung trouble. Some cats recovered; others died. The *post mortem* examination of the affected cats showed severe lung disease, broncho-pneumonia, and large white kidneys, due to fatty degeneration of the cortex — a condition similar to that met with in the human subject as an effect of diphtheria. Subcutaneous inoculations of cats were made with particles of fresh human diphtherial membrane and with culture of the diphtherial bacillus, producing a local diphtheritic swelling at the place of inoculation and a general visceral disease. When death followed after one or two weeks the *post mortem* showing was the same as that already described. The similarity between the natural and the artificial disease in cats is therefore

great. How does the cat receive the diphtherial contagion in the natural disease? The following experiment may throw some light on one of the ways: In the epidemic of diphtheria traced to milk the way in which the milk became contaminated was not ascertained, though the evidence was strong that it had not been from a case of the disease in the human subject. Two healthy milch cows were inoculated with a culture of the bacillus derived from human diphtheria. They became ill with a swelling at the place of inoculation, raised temperature and cough, and an eruption on the teats and skin of the udder appearing in successive crops. One cow died; the other being very ill was killed. On the fifth day of illness milk was drawn from a healthy teat of one of the cows, the teat and the milker's hand having been first thoroughly disinfected. From this milk cultivation was made, and in one cubic centimetre thirty-two colonies of the diphtheria bacillus without any contamination were found. The presence of the bacillus in the eruption on the udder was also demonstrated microscopically and by experiment. Some of the milk from these cows while ill was by mistake given to two cats, who fell ill with symptoms like those of natural cat diphtheria. It would appear, therefore, that a definite disease can be produced in the cow by the bacillus of diphtheria; also that the milk of the cow may contain the bacillus of diphtheria, and that said milk has the power of imparting diphtheria to cats. Now, if diphtheria can be communicated from men to cats, and from cats to men, and if cows affected with this disease can communicate it to cats through their milk it seems a not unfair inference that the disease may also be communicated to men by the same means, namely, the milk.

The fatality of tuberculosis in its various manifestations is too well known to need any extended proof. One form alone, phthisis, has been said to cause one-seventh of the total known deaths by which mankind are carried off. Dr. Ransome says that it (phthisis) causes more than one-third of the deaths occurring between the ages of 15 and 45 years—the most active period of life. During the past year there died in Cambridge at the above-mentioned ages from all causes 289 persons; from phthisis, 120 persons — 41 per cent. of the total mortality at those ages.

When there is a report of the possible approach of cholera all are on the alert to stay by every known means the advance of the dreaded disease—means in some instances of efficacy, in others utterly futile, and begotten only of terror. The commerce of a nation, it may be, is seriously interfered with. There can be no doubt that the community at large is thoroughly awake to its peril. But tuberculosis in its many forms has slain a far greater number of mankind than cholera, since in the early part of the present century, from its habitation by the delta of the Ganges, that disease started on its first recorded westward march. We hear now and then of some favored spot which is said to be free from this scourge, but wherever men are gathered together in such proximity as the exigencies of modern life make more and more necessary every day, thither does tuberculosis extend and obtain an abiding place. When a disease covers such a wide extent of territory, is constantly present and the cause of such an enormous death-rate, everything throwing light upon it is of vital importance to all interested in preventive medicine.

Attention is therefore called to the following preliminary conclusions arrived at in the investigations undertaken at the instance of the Massachusetts Society for the Promotion of Agriculture. Tuberculosis is a disease common to man and the lower animals, and it is quite common among milch cows, especially such as are kept confined in buildings. That the flesh of tuberculous cattle is a dangerons article of food has been known for some time, but the following conclusions arrived at by the investigators are of even more importance. They are:

1. The milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease.

2. The virus is present whether there is a disease of the udder or not.

3. There is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

4. The bacilli of tuberculosis are present and active, in a large proportion of cases, in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

The investigations conducted by Bollinger have led him to the following conclusions. Primary tuberculosis of the intes-

tines associated with tuberculosis of the mesenteric and retro-peritoneal glands in young persons is due to infection by food, in most cases through the ingestion of raw, unboiled, milk from tuberculous cows. Milk from tuberculous cows whose udders are healthy is virulent in 55 per cent. of the cases. Cream and butter from such milk also retain the power of infection. Considering these possible dangers from the milk supply, it seems that the Board of Health should have as much control over the keeping of cows within the city limits as it has over the keeping of swine.

With extended knowledge and increased powers we may look forward hopefully to the time when we shall have greater control than at present over many communicable diseases. It is not beyond the bounds of possibility that we may hereafter be able to destroy the germs of disease, or counteract their influence, after they have gained entrance to the body.

The natural end of all that live must remain, but as the duration of life has been prolonged in the past, there is no valid reason why it should not be further prolonged in the future. How shall we deal with the problem now before us? It is becoming more apparent yearly, as shown by the opinions of those who have given attention to this subject, that isolation offers at present the best prospect of security. The statement has been made in some quarters that isolation can be satisfactorily carried out at the patient's home. While not denying the possibility of such a result in some cases, the experience of this Board has led it to believe that isolation so systematically carried out as to make it a measure worthy of confidence, is in the majority of homes an impossibility. The diseases at present mainly to be dealt with are diphtheria and scarlet fever; the former an affection exceedingly communicable, very fatal and extremely difficult to limit with the means now at our disposal; the latter also a very communicable disease, at times exceedingly fatal, and often, even in the lightest cases, leaving effects that impair health and usefulness for life. A hospital for the reception of persons affected with such diseases is a pressing need, in a city the size of Cambridge. Such hospital will, however, inevitably fail to accomplish the purpose aimed at unless the Board of Health is invested with the power to compel its use in every case that cannot, in its opinion, be dealt with at home

in a satisfactory manner. Dr. Thorne Thorne, Assistant Medical Officer to the Local Government Board, London, estimates the necessary capacity of such an isolation hospital, taking one place with another, at one bed for every thousand inhabitants. There would of course be variations in this respect depending, among other causes, on the pecuniary circumstances of the population, and on its age distribution, these diseases finding the larger part of their material among children. During the past year there were reported of diphtheria and scarlet fever combined 346 cases, of which number 279 were under 10 years of age.

Much attention has of late years, and rightly, been given to the subjects of sewerage, of a sufficient supply of pure water, of the sanitary arrangements of dwellings, and to others of a kindred nature, whereof the community at large reap the benefit. But they must not think that the labors of boards of health in these directions absolve them from giving attention to matters of personal hygiene. Many causes of disease are the results of the actions of individuals over which boards and statutes have little or no actual control. If these causes are to be made less it must be done by unremitting individual effort. Even the successful carrying out of such works as properly come within the sphere of action of boards of health requires the approval and coöperation of the mass of the community. A large portion of the ills of mankind come from their own neglect and ignorance of those natural laws whose observance is necessary for the preservation of health to man in his passage through life. Frequently some wilful action of our own occasions "the little rift within the lute, that by and by will make the music mute."

Deaths due to the immediate and remote effects of venereal diseases and to excess in the use of alcoholic liquors do not figure largely in mortality statistics, owing to the fact that in some cases the interval between the cause and the effect is so great that the mind fails to connect them in their proper relation, mistaking for the primary cause what is in reality an effect of that cause. The social position of his patient may deter the physician from crediting the last illness to its true cause, and some other term less humiliating to the feelings of the family of the deceased is substituted. As a matter of fact, the name

given to the disease is in many cases the name of some more or less prominent symptom, or is merely indicative of a mode of dying. There is, however, no doubt that the amount of death, disease and misery due to these causes is enormous. The experience of the General Register Office, London, shows that the mortality among persons having by their occupation free access to alcoholic drinks is immensely in excess of that prevailing among persons differently situated.

Syphilis, though perhaps not in many cases an immediate cause of death, is responsible for an amount of illness, immediate and remote, and of degenerative changes leading, often after many years, to death, of which most persons have a very inadequate conception. Says Dr. F. R. Sturgis: "I estimated that in 1873, out of a population of 942,292 persons 50,450 were suffering from syphilis in New York City. I believe this number to be under rather than over the true amount. This represents only the civil population."

Nor are the effects of these causes of disease and death limited to the persons primarily affected, but they may become the starting points of disease in their offspring. Indeed, mere bodily cleanliness is with many "a custom more honored in the breach than the observance." These sources of disease must be met, if they are to be met successfully, mainly by individual effort, and not by supine reliance on committees, boards or statutes. Boards of health can ensure a supply of pure water, but they can make no one abstain from the use of alcoholic drinks. They can pass regulations regarding ventilation, but they can compel no one to open his windows. They can devise a proper system of sewerage, but they cannot systematically make people keep their water-closets clean. They can compel the notification of diseases dangerous to public health, but they have little power to prevent people exposing themselves to causes productive of many loathsome diseases. In brief, they can in many cases of personal hygiene point out the means conducive to the preservation of health, but it is personal effort that must give these means effect.

In the opinion of the Board, important sanitary interests dependent on the increasing population of the city render necessary for their efficient supervision an additional Sanitary Inspector. Much of the value of the action to be taken depends

on the accuracy of the information and on the promptness with which it is received. The city has outgrown the limit that makes it possible for one Sanitary Inspector to perform this work in a manner suitable to its importance.

Dr. Alfred F. Holt died at Martin, Florida, on the 28th day of December, 1890. At a recent meeting of this Board it was voted that there be placed on the records of the Board the following statement:—

Dr. A. F. Holt, Surgeon-General of the Commonwealth, one of its Medical Examiners, was appointed Health Officer of this Board December, 1879.

His service here, as in every other position and relation in life, was marked by strict integrity, scientific attainment, and pure public spirit.

D. H. THURSTON,
H. P. WALCOTT,
WM. H. WHITNEY,
} *Board of Health.*

CITY OF CAMBRIDGE,
OFFICE OF BOARD OF HEALTH, Dec. 31, 1890.

To the Honorable City Council:—

GENTLEMEN: The following is a statement of the expenditures of this board during the financial year ending November 30, 1890.

The amount appropriated for the Health Department was . . .		$3,500 00
Amount expended:—		
One tester	$1 50	
Analysis of water	5 00	
Blank Books	14 99	
Blanks and printing	34 39	
Burying animals	83 40	
Carriage hire	3 00	
Car tickets	75 00	
Cow-pox points	35 25	
Directory	2 50	
Disinfectants	38 44	
Expressage	65	
Legal services	100 00	
Police officer's services	25 00	
Postage stamps	27 00	
Serving legal notice	1 50	
Stationery	6 00	
Salary, Medical Inspector	1,500 00	
Salary, Sanitary Inspector	1,000 00	
Salary, Clerk of Board	150 00	
Services, extra, in issuing burial permits	25 00	
		$3,128 62
Balance unexpended		$371 38

By direction of the Board of Health.

JOHN McDUFFIE,
Clerk.

APPENDIX.

Causes of Death in 1890.

ARRANGED ALPHABETICALLY.

Diseases, etc.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Abscess	....	....	1	....	....	....	....	....	....	....	....	....	1
Accident	1	2	2	6	4	3	1	2	2	....	4	2	29
Alcoholism	....	....	2	1	....	....	....	1	....	....	....	1	5
Anæmia	1	....	....	....	1	....	....	....	....	1	....	1	4
Aneurism	....	1	....	....	....	....	....	....	....	....	....	....	1
Appendicitis	....	...	....	2	....	....	....	....	....	....	....	....	2
Apoplexy	1	2	2	4	2	2	2	2	3	2	....	4	26
Asphyxia	....	....	....	1	1	....	....	....	....	....	....	1	3
Asthma	....	....	.. .	....	1	....	....	....	....	....	....	1	2
Atrophy	6	1	....	....	....	....	10	5	9	5	1	3	40
Brain Diseases	2	....	2	1	1	....	1	2	....	1	1	1	12
Bronchitis	14	3	6	3	6	3	2	1	1	1	5	2	47
Calculus	....	....	....	....	1	....	....	....	1	....	....	....	2
Cancer	5	....	3	5	4	1	5	8	5	3	6	3	48
Cellulitis	....	....	1	....	1	....	....	....	....	....	....	....	2
Cerebral Embolism	....	2	....	....	....	....	....	....	....	....	....	....	2
Cerebro-spinal Fever	1	....	....	1	1	....	1	1	....	....	....	....	5
Childbirth	....	2	....	....	1	....	....	1	....	....	1	....	5
Cholera Morbus	1	....	....	....	....	....	....	....	....	....	....	....	1
Convulsions	3	1	2	4	1	3	1	2	2	2	3	2	26
Croup	1	....	1	2	....	....	....	....	1	....	....	....	5
Cyanosis	....	....	....	1	....	....	....	....	....	1	....	....	2
Cystitis	....	....	....	1	1	....	1	1	....	1	....	....	5
Debility	....	....	2	3	6	5	....	3	3	3	2	5	32
Dementia	....	....	....	....	....	....	....	....	....	....	1	....	1
Diabetes	....	....	1	1	....	....	2	....	...	2	1	....	7
Diarrhœal Diseases	....	2	3	1	5	3	40	48	14	10	2	2	130
Diphtheria	9	4	2	4	2	2	3	1	..	1	1	3	32

Causes of Death in 1890.—*Continued.*

Diseases, etc.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Dropsy	1	....	....	....	....	....	....	....	1	....	....	....	2
Dysentery	....	....	1	....	....	....	....	1	1	1	....	....	4
Dystocia	....	....	1	....	....	....	....	....	....	....	....	....	1
Embolism	....	....	....	1	....	....	....	....	....	....	....	....	1
Erysipelas	....	....	1	1	....	....	....	....	....	....	....	....	2
Fever, Scarlet	....	1	2	....	4	....	....	....	....	....	2	1	10
Fever, Typhoid	....	1	2	....	1	1	1	2	3	4	1	1	17
Fracture	....	....	....	....	....	....	....	4	....	....	1	....	5
Gangrene	....	....	1	....	1	....	1	....	....	....	....	2	5
Gastritis	2	....	2	2	2	2	....	2	....	....	....	....	12
Heart Diseases	9	6	6	7	3	4	2	4	7	6	8	7	69
Hernia	....	....	....	....	....	....	1	....	....	....	....	....	1
Hemorrhage	1	....	....	....	1	1	....	....	....	....	....	....	3
Hydrocephalus	....	....	....	1	1	....	2	....	....	....	....	....	4
Indigestion	...	....	....	....	....	....	1	....	....	....	....	....	1
Influenza	13	....	....	1	2	....	....	....	....	....	....	....	16
Jaundice	....	....	....	....	....	1	....	....	....	....	....	....	1
Kidney Disease	1	....	....	....	....	....	....	....	....	....	....	....	1
Laryngismus Stridulus	....	....	....	....	...	....	....	1	....	1	....	....	2
Liver Diseases	2	2	....	....	1	....	....	....	....	....	1	2	8
Locomotor Ataxia	....	....	1	....	....	....	....	....	....	....	....	....	1
Lung Diseases	4	2	1	....	2	3	....	1	....	1	3	2	19
Measles	1	....	....	....	....	....	....	....	....	....	....	....	1
Meningitis	4	5	7	2	5	6	9	5	10	2	4	4	63
Microcephalus	....	....	1	....	....	....	....	....	....	....	....	....	1
Myelitis	....	....	....	1	....	1	....	....	....	....	....	1	3
Nephritis	2	2	4	4	5	1	2	4	5	2	4	4	39
Neuritis	....	....	....	....	....	1	....	....	....	....	....	....	1
Occlusion of Intestines	....	....	....	....	....	....	1	1	....	1	....	1	4
Old Age	....	4	2	3	....	1	1	....	1	....	1	....	13
Paralysis	1	1	1	....	3	2	3	3	1	....	3	3	21
Pericarditis	....	....	....	1	....	....	....	....	....	....	....	....	1
Peritonitis	3	1	...	....	3	2	2	....	2	....	1	....	14
Phthisis	23	10	18	8	14	17	9	15	13	12	18	11	168

Causes of Death in 1890.—*Continued.*

Disease, etc.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Pneumonia	24	8	10	12	7	8	6	2	6	5	6	14	108
Premature Birth	1	2	2	1	1	2	....	3	1	1	....	....	14
Puerperal Fever	....	....	..	1	....	....	....	1	....	....	....	....	2
Purpura Hemorrhagica	....	1	....	....	....	....	....	1	....	....	....	1	3
Pyemia	....	....	....	....	....	1	1	1	....	....	1	....	4
Scrofula	....	....	....	....	....	1	....	....	....	1	....	....	2
Septicæmia	....	....	....	....	....	....	1	3	....	....	....	....	4
Spina Bifida	....	1	....	....	....	....	....	....	....	....	....	....	1
Stillborn	12	10	2	8	10	6	6	10	7	10	5	9	95
Suicide	....	....	....	....	....	....	....	....	....	....	1	....	1
Sunstroke	....	....	....	....	....	....	1	1	....	....	....	....	2
Syphilis	....	....	....	1	....	...	1	...	....	..	....	....	2
Thrombosis	1	....	....	....	1	....	....	....	....	....	....	1	3
Tuberculosis	....	....	....	....	....	4	1	1	2	....	....	1	9
Tumor	....	....	....	....	1	....	....	....	2	1	....	1	5
Ulcer	1	1	....	1	....	....	1	....	....	....	....	....	4
Unknown	5	1	....	2	2	1	1	1	7	3	....	3	26
Whooping Cough	....	....	....	....	....	....	5	3	2	....	3	....	13
	156	79	95	99	109	88	128	148	112	84	91	100	1289

Cases of Typhoid Fever, Scarlet Fever and Diphtheria reported to the Board of Health for the Year 1890.

	Ward.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
	1	2	0	0	0	0	0	2	2	4	4	0	1	19
	2	1	3	1	1	1	3	1	1	9	3	2	1	27
Typhoid Fever.	3	2	0	0	0	0	0	0	0	0	1	2	0	5
	4	0	0	0	1	1	0	2	1	0	2	2	4	13
	5	1	1	1	3	1	0	0	3	2	2	1	0	12
Totals		6	4	1	3	3	3	5	7	15	12	7	6	76
	1	8	4	1	5	6	0	0	0	0	0	0	11	35
	2	1	8	4	6	10	5	2	1	2	8	6	9	62
Scarlet Fever.	3	0	6	1	2	1	4	5	1	2	0	3	1	26
	4	2	4	4	5	9	3	2	0	0	3	7	5	44
	5	0	5	4	9	1	0	0	1	0	0	1	1	22
Totals		11	27	14	27	27	12	9	3	4	11	17	27	189
	1	7	3	3	2	1	2	0	1	0	2	2	0	23
	2	13	7	6	3	5	1	4	0	1	1	6	1	48
Diphtheria.	3	6	3	2	2	1	9	0	1	3	0	0	0	27
	4	2	2	12	6	7	0	1	1	2	4	4	5	46
	5	3	3	1	0	1	1	1	0	0	0	1	2	13
Totals		31	18	24	13	15	13	6	3	6	7	13	8	157
Grand totals		48	49	39	63	45	28	20	13	25	30	37	41	422

REPORT

OF THE

SUPERINTENDENT OF LAMPS.

CITY OF CAMBRIDGE,
OFFICE OF SUPERINTENDENT OF LAMPS,
CAMBRIDGE, MASS., NOV. 30, 1890.

To the Honorable the City Council:—

I HAVE the honor to submit for your consideration the annual report of the Lamp Department.

Amount appropriated	$51,575 80
Amount expended	49,269 02
Balance unexpended	$2,306 78

Amount expended as follows:

For Electric lighting	$25,923 30
Gas	13,949 01
Care of lamps	7,577 11
Setting posts and lanterns	212 64
Repairs on posts and lanterns	168 14
Oil and matches	224 91
Glass, paints, etc.	126 05
Carriage hire	127 00
Electric repairs	41 28
Printing, etc.	19 58
Superintendent's salary	900 00
	$49,269 02

The expense of electric lighting has been as follows:

Arc Lighting.

Amount of bills rendered	$20,447 90
Amount of deductions for outages	173 55
Cost per lamp, as per contract	180 00
Cost per lamp, all expenses	181 44

Incandescent Lighting.

Amount of bills rendered	$5,788 82
Amount deducted for outages	139 87
Cost per lamp, as per contract	30 00
Cost per lamp, all expenses	31 10

The expense of gas lighting has been as follows:

Amount expended for gas	$13,949 01
Amount expended for care of lamps	6,668 65
Amount expended for repairs	148 10
Amount expended for setting posts	173 88
Amount expended for glass, etc.	110 98
Amount expended for all other expenses	302 59

The cost of gas lighting, including all expenses, has been $29.71 per lamp.

Oil Lighting.

Amount expended for oil and matches	$224 91
Amount expended for care of lamps	908 46
Amount expended for repairs	20 13
Amount expended for setting posts	38 76
Amount expended for glass	15 06
Amount expended for all other expenses	41 08

The cost of oil lamps, including all expenses, has been $12.74 per lamp.

The cost of repairs for the gas and oil lamps during the year past was $2.05 per lamp, while the average expense of setting and piping new posts was $4.83 per lamp.

Sixty-three lamps have been located during the year past, and have been distributed as follows:

	Arc.	Incandescents	Gas.	Oil.	Totals.
Ward 1	1	1	10		12
Ward 2		8	4	1	13
Ward 3		1	1	2	4
Ward 4		4	7	5	16
Ward 5		4	14		18
Total	1	18	36	8	63

The whole number of lamps now in use is 1,133. Of this number, 116 are arc lamps, 197 incandescent, 722 gas, and 98 oil. The number of hours in which one or more electric lamps have failed to burn has been as follows:

For Arc lamps	3,470 hours.
Incandescents	13,987 hours.
Total	17,457 hours.

The number of hours in which one or more gas lamps have failed to burn has been 5,183.

While the number of gas lamps is twice that of the arc and incandescent lamps combined, yet it will be seen that the outages for the electric lamps are more than three times the amount of the gas lamps, and very much in excess of that of the previous year. We are promised a relief in this direction in the near future.

The gas lamps have burned in the aggregate 2,583,086 hours, averaging 10 hours 7½ minutes burning per day, and consuming 10,332,344 cubic feet of gas, at a cost of $19.32 per lamp.

Respectfully submitted,

B. OTIS DANFORTH,
Superintendent of Lamps.

REPORT

OF THE

SEALER OF WEIGHTS AND MEASURES.

CAMBRIDGE, November 30, 1890.

To His Honor the Mayor and the City Council of the City of Cambridge :—

I HAVE the honor to submit for your consideration the annual report of the department of Weights and Measures.

The expenses of the department have been as follows:

For Salary of Sealer	$350 00
Salary of deputies	531 87
Use of horse	146 50
Printing	34 50
One set block weights	13 50
One set new measures	19 55
Steel stamps and brands	18 22
Gas consumed	15 25
Carpenter work	12 86
Repairs of scales	7 80
Bill posting	3 00
Hardware, tools, etc.	19 16
Total	$1,172 21

Operations of the Department.

Number of scales sealed	1,406
Number of weights sealed	5,475
Number of dry measures sealed	1,465
Number of liquid measures sealed	1,370
Number of yard-sticks sealed	41
Number of coal-baskets sealed	233
Number of cans sealed	35,237
Total	45,227

Number of scales found incorrect, and adjusted	762
Number of scales found incorrect and condemned	38
Number of weights found incorrect and adjusted	509
Number of weights found incorrect and condemned	143
Number of dry measures found incorrect and adjusted	11
Number of dry measures found incorrect and condemned	38
Number of liquid measures found incorrect and adjusted	50
Nnmber of liquid measures found incorrect and condemned	49
Number of yard sticks found incorrect and condemned	33
Number of coal baskets found incorrect and condemned	111
Number of cans adjusted	8,500
Number of cans condemned	4,105
Total	14,349

The amount of cash received for sealing was $495.37.

Inventory of the property in Sealer's office belonging to the City of Cambridge, November 30, 1890 :—

Standards.

1 county avoirdupois balance capable of weighing from 1 grain to 50 pounds.
1 apothecary scale capable of weighing from $\frac{1}{80}$ of a grain to 3 ounces.
1 set of steel weights, 5, 10, 20, 25, 50 pounds (5 weights).
1 set of brass avoirdupois weights, from 1 drachm to 4 pounds (12 weights).
1 set iron liquid measures from one gill to one gallon (6 measures).
1 set iron dry measures from one quart to one-half bushel (6 measures).
1 brass yard stick.
1 set of Troy cup weights, from $\frac{1}{8}$ of an ounce to 1 pound (9 weights),
1 set of metric weights from one gram to one kilogram (13 weights.
2 set metric metric weights, from 1 centigram to 20 grams (14 weights).
1 set apothecary's weights, from $\frac{1}{10}$ of a grain to 300 grains (15 weights).
1 brass kilogram in case.
1 meter in case.
1 oak cabinet.
1 pine cabinet.

Duplicates and Working Sets.

1 try scale in walnut box.
2 sets of avoirdupois weights from one drachm to four pounds (24 weights).
1 set of iron weights of fifty pounds each (20 weights).
2 sets of copper liquid measures from one gill to one gallon (14 measures).
1 set copper dry measures from one quart to one-half bushel (6 measures).
1 drilling machine for wagon.
1 vise for wagon.
6 iron weights of 25, 10 and 5 pounds.
3 can irons.
2 steel balances.
2 hand drills.
3 hammers.
6 files.
1 plane.

The work of this department has steadily increased during the last three years and will undoubtedly continue to do so, though the amount will not be as large the present as in the

year just passed, which is remarkable compared with previous records.

By a comparison of figures it will be found that there were 42,080 more scales, weights, measures, etc., tested this year than last. From November 30, 1887, to November 30, 1888, there were three days in which articles were brought to this office to be tested and sealed. This year the office work occupied just 232 days. A portion of the time it was found necessary to employ three men, and they were obliged to work early and late. Not only has the office work but that of visiting stores, shops, factories, etc., also largely increased.

A portion of the work accomplished this year—that of testing prescription scales—has never before been attempted in this city, and, as far as I am able to learn, never in the State of Massachusetts. It has been our opinion that if there were any particular kind of scales and weights which needed supervision they were those of druggists, and the investigations made thus far have proved that such is the case.

While there were exceptions, as a rule the scales examined were not up to that degree of excellence which would warrant the weighing of deadly poisons. One or two were found to be sensitive only to a half-grain, and there was one instance of a scale being sensitive only to a grain and a half. All such as were considered unsafe for use were condemned, and either put in a proper condition or replaced by new ones. When it is to be considered that it is not an uncommon occurrence that a druggist is required to put up a prescription calling for a quarter of a grain of strychnine or morphine, one can readily see the necessity of all such scales being brought up to a proper degree of sensitiveness, none being too fine for the purposes for which they are intended. The weights, generally speaking, were in fair condition, yet there were instances where persons were using those which were not only slightly incorrect but were wholly unfit for use. All such weights were condemned and either seized or at once destroyed. Reference has been made to the great increase of work, yet there remains a large amount unperformed which could and should be done to bring the department up to a proper standard.

We are delayed and annoyed a great many times in not having a horse at our disposal. It is quite often the case that, after

having made our annual round, we are called upon to again test scales, and the use of a horse is made a necessity. In some instances there is no particular hurry, while in others the matter needs immediate attention. Whenever we can, for the sake or economy we ask people to wait until such time as the work can be done with the least expense to the city. To hire a horse for every such case would greatly increase the expenses of the department, and while the statutes provide that certain fees shall be charged for various kinds of work, yet there is no provision made for horse hire. Some persons can be found who are willing to pay this expense, but as a rule people object. Then, too, the city is visited from day to day by a large number of peddlers, most of whom come from out of town, who sell an inferior quality of goods, and carry measures which are unsealed, and in some instances with false bottoms, and resort to all sorts of means to defraud the people who are unfortunate enough to buy of them. Generally speaking, those who suffer can least afford it. The peddlers are ever on the alert for the sealer or his deputy, and though their horses, as a rule, are not what is generally considered speedy, yet they are enabled to get away from the sealer, who has no horse. Very few of these persons would bring their measures to this office to be sealed unless compelled to do so, and unless we happen to come upon them unawares they roam about as they will. A large part of the increase of work at the office is attributable to that of sealing milk-cans. It was found that cans were being manufactured which were of short measure, and after having been in use, by reason of jamming and pounding, were made still smaller. There has been a great improvement in this direction, the manufacturers having had their patterns made to conform to the standards, while the milkmen are taking better care of their cans, yet much remains to be done in this branch of the work.

Respectfully submitted,

B. OTIS DANFORTH,

Sealer.

REPORT

OF THE

INSPECTOR OF MILK AND VINEGAR.

CAMBRIDGE, December 1, 1890.

To the Honorable the Mayor and City Council of Cambridge:—

GENTLEMEN: The effort of this department is to prevent the sale of milk or vinegar which falls below the legal standard of purity, and as milk is much the most important of these two articles of food, the principal part of the work is devoted to it. The Public Statutes require all persons who sell milk from a team, or carry it around by hand, to take out a license between the first of May and the first of June, good for one year and costing fifty cents. A neglect or failure so to do renders them liable to a fine of from thirty to one hundred dollars. All persons who sell milk from a store are likewise required to take out a license as soon as they start in the business, which also costs fifty cents and is good so long as they continue business in the same place and under the same name. A failure to take out such a license renders them liable to a fine of twenty dollars. All vehicles used in the conveyance or sale of milk must have the owner's name, address and license number legibly placed upon the outside. The inspector is obliged to license in a similar manner all persons engaged in the sale of oleomargarine.

The number of milk licenses thus issued during the year is 360, and the number issued for the sale of oleomargarine is 17, for which the sum of $188.50 has been collected and paid over to the City Treasurer.

Though the Inspector is allowed by law, either by himself or his agents, to take samples of milk wherever kept for sale, it has

been found to conduce to good feeling and to facilitate the filing of complaints if such samples are paid for when taken, and such payment is now always made.

The Collector is provided with a basket holding sixteen pint cans, a bunch of tags like the ones shown, and makes three trips a week to all parts of the city, collecting samples of milk or vinegar, as the case may be, from all persons found having them for sale. When the basket is full, it is brought to the laboratory and turned over to the Inspector. A card is filled out and tied to each can at the time of purchase, and is also numbered to correspond to a number on the stopper of the can.

Specimen of card used for marking samples of Milk.

O

MILK.

Date,.....*189*

Time,.....*A.M.*.....*P.M.*

IF A STORE

Proprietor's Name,.....

.....

No.....*Street.*

Sold by.....

Price paid,.....*Quantity*,.....*Pt.*

Milkman, ...

IF A WAGON.

Name on Wagon,.....

.....

Driver in Charge,..... .....

License No.....

Whether marked Skimmed Milk,.....

Amount in Can,.....

Collector,.....

No. of Sample Can, ...

Sealed Sample,.....

Reverse of card.

O

ANALYSIS.

.....

Specific Gravity,.....

Milk Solids,.....

Fat, ...

Not Fat, ...

Milk Sugar,.....

Ash,.....

Caseine, etc., ...

Water,.....

Water added,.....

.....

.....

Specimen of card used for marking samples of Vinegar.

O

VINEGAR.

Date,.....*189*

Time,.....*A.M.*..... *P.M.*

Proprietor's Name,.....

.....

No...... .....*Street.*

Sold by.... .....

Price paid,.....*Quantity,*..... *Pt.*

Wholesale Dealer, ...

.....

No. on Sample Can,.....

Collector,.....

.....

....

Reverse of card.

O

ANALYSIS.

Analysis No...... .....

Total Solids, ...

Acidity, ...

Reaction with $Pb(C_2H_3O_2)_2$.....

....

Reaction with $Ba(NO_3)$.....

....

Reaction with $(NH_4)_2C_2O_4$.....

.....

Reaction with $AgNO_3$.....

.....

.....

.....

Each sample of milk is turned out into a tall glass jar holding about one pint, and its specific gravity is taken by means of a lactometer. A thermometer is then placed in the milk to get the temperature, and the proper correction is made to the reading of the lactometer. Roughly, each five degrees centigrade above or below fifteen makes a change of one degree in the reading of the lactometer.

The percentage of fat is then estimated by means of Feser's lactoscope. This instrument is a small glass cylinder, in the bottom of which is a rod of white glass with a few transverse black lines ruled upon it. Upon the outside of the cylinder is a

scale indicating the percentage of fat. Four cubic centimeters of milk are poured into the cylinder and then water is added until the black lines become faintly visible. The level of the milk and water in the cylinder indicates the percentage of fat. The specific gravity and the percentage of fat enable an estimate to be made of the quality of the milk tested. Any samples which are found to be of doubtful quality are set aside for further examination; the others are passed.

The complete analysis is performed as follows:—

Five grammes of milk are weighed into a small platinum dish and evaporated to dryness over a water bath. The dish is then placed for about an hour in a drying oven heated to 105° centigrade, and then weighed. Deducting the weight of the dish, you have the weight of the total solids in five grammes of milk, from which the percentage is easily calculated. The dish is then filled with petroleum naphtha and heated over a water-bath; the hot naphtha rapidly dissolves the fat, and when about half evaporated, is poured off and more added; this is repeated three times, and then the dish is washed, inside and out, with naphtha from a wash bottle, carefully dried and weighed. Its present weight, deducted from its previous weight, gives the amount of fat. From this is also calculated the percentage of solids not fat, which consists of milk sugar, ash, caseine, etc. The amount of water in the milk is found by subtracting the total solids from one hundred, and the amount of water added, if any, is calculated from the solids not fat. The percentage of ash may be found by heating the dish to redness for a few moments and weighing when cool. The detection of artificial coloring matter requires a separate analysis, which is only undertaken in certain cases. Annotto is the color ordinarily used and the method of detecting it will be described later.

The legal standard for pure milk is as follows: Total solids, 13 per cent.; fat, 3.70 per cent.; solids not fat, 9.30 per cent.; water, 87 per cent.; and those samples conforming closely with these figures are passed as good. Those which fall much below them are set aside, and either a notice is sent to the persons selling them, warning them that they are liable to a fine if they continue the sale of such milk, or a complaint is entered against them. These notices read as follows:

CITY OF CAMBRIDGE.

OFFICE OF INSPECTOR OF MILK,
CITY HALL, CAMBRIDGE, Dec. 1, 1890.

You are hereby notified that a sample of milk recently obtained from you was found on analysis to be of poorer quality than is required by the statutes. You are respectfully warned that the sale of such, or the possession or custody of the same with intent to sell, renders you liable to the penalties provided in the Public Statutes. Further information will be furnished you on personal application at this office.

Respectfully yours,

F. A. DUNBAR,
Inspector.

OFFICE HOURS—Monday, Wednesday and Friday, from 9.30 to 10.30 A. M.

Several notices are always sent before a complaint is entered, and dealers are given every chance to improve the quality of their milk. They are always at liberty to bring as many samples to the office as they desire, and have them tested by the lactometer and lactoscope free of charge, and they can always have their milk supply investigated when within the city limits. A few milkmen avail themselves of this privilege, but scarcely any of the storekeepers or consumers take the trouble to bring samples to the office.

The Inspector hears many complaints from dealers that samples for analysis are sometimes taken from cans, part of the milk from which has been sold, they claiming that samples should always be taken from a full can. The Inspector has never been able to see the justice of this complaint, or why the best only of a dealer's supply should be taken for analysis. The law is very explicit on this point: that no milk below a certain standard of goodness shall be offered for sale, whether from a full can or from one partly used, and it is certainly equally hard on the consumer to be obliged to put up with poor milk, whether it is the first quart or the last quart sold from the can. There would be more justice in this complaint if it were not perfectly easy to have all the milk sold from a can equally good. It merely necessitates that the can shall be thoroughly shaken up before each sale; or, if this is too hard work, the milk can be sold from a wide-mouthed jar and dipped out with a ladle, as is done in many places at present. By this means the milk can be kept of the same quality with the very smallest amount of

trouble, and there is no danger of selling off most of the cream to the first few customers.

Skimmed milk, when sold for what it really is, forms a very cheap and nutritious article of food, and especial regulations have been made in regard to its sale. All cans, vessels or measures from which skimmed milk is sold must be conspicuously marked on the outside "Skimmed Milk," in uncondensed Gothic letters not less than one inch high. It has also been held that to sell skimmed milk to any person calling for milk, even if sold from a properly marked can and measure, is a violation of the statute, unless the purchaser is at the same time informed that the milk is skimmed. The call for milk implies that milk of standard quality is wanted.

The standard established for skimmed milk is that it shall contain not less than 9.30 per cent. of solids exclusive of fat, an amount of solids easily reached after very thorough skimming of pure milk of average quality.

A very common form of adulteration of milk is to remove part of the cream, and then add enough coloring matter to give the milk a rich yellow appearance. Such adulteration, if carried to any extent, is easily detected by the lactoscope and lactometer, and the loss of cream is confirmed by the full analysis of the sample.

The articles usually sold to color milk contain annotto, and an especial test has to be made for its detection. The method generally employed is as follows: A test tube is nearly filled with milk, made strongly alkaline by the addition of a solution of carbonate of soda. A small strip of white filter paper is placed half in the milk and half out, and the test-tube set away in the closet over night. The next morning the strip of paper is washed in running water, when, if annotto were present in the sample, a light salmon-colored stain appears on that half of the paper which was in the milk. This stain changes to a light pink if dipped in a solution of chloride of tin. A rough estimate can be made as to whether the yellow color of a sample of milk has been artificially produced, or is caused by something in the feed of the cows (as is often seen during spring and summer), by pouring a pint into a tall glass jar and allowing the cream to rise. Ordinarily a pure milk will show a highly colored layer of cream on the top and a bluish tinge to the milk

beneath, while a milk artificially colored shows but little cream and a yellowish tinge beneath.

Coloring matter is also found in samples of milk which have been watered. Here it is also used to give the milk a rich appearance and conceal the dilution caused by watering. The addition of water to any considerable extent can be easily detected in the preliminary examination of the samples; the specific gravity is found to be very low, without a corresponding increase in the amount of cream, but a full analysis is necessary in order to determine the amount of water added.

A great many complaints are made on the injustice of entering a complaint against a man for selling adulterated milk when it cannot be shown that he himself is guilty of the adulteration, and it cannot be denied that in certain cases the law causes a good deal of hardship. The quality of the milk finally supplied to the consumer depends, however, on the strictness with which the law is enforced, and a comparison of the results obtained during the last five years shows that the quality of the milk sold in this city is constantly improving:—

	1886.	1887.	1888.	1889.	1890.
Number of samples collected	731	1,222	1,576	1,936	1,694
Number good	624	960	1,402	1,025	1,467
Number poor	107	262	174	311	227
Number of warnings sent	107	257	165	265	188
Number of prosecutions	.....	10	5	6	6

The same thing is seen by looking at the results obtained in Boston and other cities where the law is strictly enforced. The milk now sold is of a vastly better quality than that sold before the present law went into force.

If it were necessary for the Inspector to prove that the man in whose hands a sample of watered milk is finally found, really put the water in himself, or knew that it was put in, a conviction would scarcely ever be possible, and the quality of the milk suppy would be similar to what it was before the present regulations. By far the larger part of the milk sold in this city is raised anywhere from ten to seventy-five miles back in the coun-

try. Some of it comes from outside the State. The farmer loads it on his team after putting it up in cans, his man drives it to the railroad station, there it is loaded on the cars and brought to some one of the large contractors in the city; the milkman then gets it and takes it home to his stable, and next morning distributes it to his stores and customers; in the case of store milk, the proprietor or his clerk afterwards retails it. Where milk goes through so many hands as this it is, of course, impossible for the Inspector to be sure just where the fault lies, and the only way of securing pure milk seems to be to make each one through whose hands it passes feel that, if milk of poor quality is found in his possession, he is directly responsible for it, no matter whether he has done anything to it or not. This ought to be taken into consideration before any one starts selling milk, and the profit to be derived from its sale, compared with the risk taken. At present the profit is certainly small, and the risk considerable; but as there is not the slightest obligation on any one to take the risk, there seems but slight cause of complaint at the apparent injustice.

As a matter of fact, it is the custom of this office to make all possible allowances. No one is ever prosecuted without full and ample warning, and dealers are always told, when they come to the office, that, while they are at liberty to bring as many samples as they please, and have them tested free of expense, they themselves are directly responsible for the quality of the milk they sell; and that if they choose to sell it they must either see that it is of good quality, or take the risk of a prosecution; and it is a constant source of surprise to the Inspector that so many persons are ready to take this risk, considering the very slight profit they can make if they sell the milk just as they receive it.

It will be seen, by referring to the table, that not quite so many warnings are sent as the number of poor samples found. The reason of this is, that though a sample may not give quite thirteen per cent. of solids on analysis, it may still come so near as to make it seem inexpedient to make any complaint. It is the custom of most chemists to make an allowance of about half of one per cent. in the total solids, and to compare the different figures of the analysis in judging of the quality of the milk.

The law requires all vinegar sold to have an acidity of 4.50 per cent., by weight, of acetic acid, and in the case of cider vinegar

a residue, on drying at 100° centigrade, of not less than 2 per cent. of cider vinegar solids.

As a matter of fact, a pure cider vinegar should exhibit several other characteristics besides these, but these two are the only ones provided for by the Public Statutes and, though better than nothing, doubtless allow of a very considerable adulteration which it is at present impossible to prevent.

The manufactured vinegar, as found in the stores, almost always has the required degree of acidity, but falls far short in solids, and this is nearly always the ground of complaint.

The manner in which the acidity is determined is as follows: Six cubic centimeters of vinegar are poured into a glass beaker, containing about the same amount of water; two drops of an alcoholic solution of phenol-phthalein are added, and a solution of sodic hydrate, of known strength, is run in from a burette, until the color of the vinegar changes to a bright cherry, which happens as soon as the acid is completely neutralized. Then, reading off the amount of soda solution used, the percentage of acidity is easily calculated. In order to get the total solids five cubic centimeters of vinegar are run into a platinum dish, evaporated to dryness on a water bath, and then weighed. Deducting the weight of the dish, the percentage of solids in the vinegar can be calculated without difficulty. One hundred and three samples of vinegar have been collected and analyzed as described above during the year. Of these samples thirty were found not to conform to the standard for cider vinegar, either in acidity or amount of solid residue, and as a result thirty persons were warned and one dealer was prosecuted. A conviction was secured in the lower court, but the case was appealed and has not yet been decided.*

The amount expended in this department for the last year is as follows:

Paid for milk	$59 35
Paid for vinegar	5 40
Postage and stationery	12 10
Chemicals, expressage, etc.	10 80
Total	$87 65

Respectfully submitted,

F. A. DUNBAR,

Inspector of Milk and Vinegar.

* Since writing the above this dealer has paid his fine.

REPORT

OF THE

INSPECTOR OF WIRES.

December 29, 1890.

To the Honorable City Council of the City of Cambridge : —

I HAVE the honor of submitting to you the first report of this department.

A bill requiring each city to appoint an inspector of wires was signed by the Governor of the State of Massachusetts, June 11, 1890 (a copy of which is attached to this report), and Cambridge was the first city to comply with the provisions of the law by the appointment of an inspector, July 15, 1890.

The law makes the Inspector take the responsibility of all wires over streets and buildings and of all wires within buildings when said wires are to carry electric light or power currents. The several owners of wires are allowed six months from the appointment of the Inspector in which to tag or mark their wires at each point of contact, and all wires not so marked are to be removed by the Inspector at the expense of the owner.

The six months allowed by law for this marking will expire on January 15, 1891, when the city will be made safe as far as dead wires are concerned; and, as the city ordinance requires the owners of wires to file a bond in the penal sum of ten thousand dollars, exempting the city from any damage which may result from their lines, no company will tag any abandoned wires, because these tags make them responsible for any damage which might result from the wires so marked.

Since the appointment of the Inspector the West End Street Railway Company, the Cambridge Electric Light Company and several individuals have executed these bonds and several other companies and individuals are about to do the same.

It has been found that the inspection of the interior wiring of

buildings is of the utmost importance, as wiring companies have been in many instances negligent in their construction. The ordering of nearly four hundred changes in this class of work and the enforcement of these orders has had the desired effect, and nothing but first-class work is being done at the present time. It is gratifying to find that property owners very much appreciate this part of the work, being before at the mercy of the companies, not knowing of the unsatisfactory methods.

Overhead construction is receiving the careful attention of the Inspector, and all new work is required to be up to the highest standard of neatness and safety. This will soon give the City of Cambridge a satisfactory overhead system of wires.

By the carrying out of an agreement between the Committee on Lamps and the Electric Light Company, the Harvard street electric light line is to be put in good condition in the spring.

Main street is now in a dangerous condition, the present pole lines being much too light for the heavy load of wires which it carries.

Cambridge street is also in a dangerous condition, which, it is hoped, may be remedied in the early spring by a joint location for poles being given the electric light and railway companies; their poles to be located opposite the present telephone posts, so that the two lines may carry the trolley wire, thus saving two lines of iron poles. The Western Union poles should be removed, and their wires carried on either the electric light or telephone poles, thus making two lines do the work of five lines of poles on that street.

It is hoped that the New England Telephone and Telegraph Company will replace its open lines of wire with aërial cables, which are much safer for the public and cause less interruption to their service.

The danger of overhead wires carrying currents of high potential is already well known by the public. If it were less than most people believe, it is better that the public should keep in fear of it, as this fear no doubt has prevented many accidents.

The police patrol wagon has been provided by this department with rubber gloves and a pair of cutters with rubber-covered handles, which are strong enough to cut the heavy wires of the railway company.

The Electric Light Company should be required to run its

wires on poles sufficiently tall to clear the limbs of trees, which are sure in stormy weather to cause "grounds" and consequent danger, as contact with a wire carrying a high potential current which is grounded at a distance is extremely dangerous to life and property.

At the present time there are in Cambridge about 550 miles of open wires, a little less than 200 miles of wire in aërial cables, and 333.2 miles of underground wires, owned by the New England Telephone and Telegraph Company. The Cambridge Electric Light Company own over 200 miles of wire in Cambridge. The West End Street Railway Company has 17 miles of trolley wire guarded with 30 miles of iron wire. Current is distributed by means of 30 miles of feed wire.

Nearly 200 miles of wire is owned by the city, being used by the Police and Fire Departments. Private lines bring the total mileage to about 2000 miles.

Respectfully submitted,

CHAS. H. MORSE,

Inspector of Wires.

[CHAP. 404.]

AN ACT RELATING TO THE REGULATION AND SUPERVISION OF WIRES OVER STREETS OR BUILDINGS IN CITIES.

Be it enacted, etc., as follows: —

SECTION 1. Every person or corporation, private or municipal, owning or operating a line of wires over streets or buildings in a city, shall use only wires that are suitable and strong; shall suitably and safely attach them to strong and sufficient supports, and insulate them at all points of attachment; shall remove all wires abandoned for use; shall suitably insulate every wire where it enters a building, and, if such wire is other than a wire designed to carry an electric light or power current, shall attach to it at suitable and convenient points in the circuit, calculating to prevent danger from fire and near the place of entering the building, an appliance calculated to prevent at all times a current of electricity of such intensity or volume as to be capable of injuring electrical instruments or causing fire from entering the building by means of such wire, beyond the point at which such appliance is attached, and shall suitably insulate every wire within a building when such wire is designed to carry an electric light current.

SECTION 2. Every such person and corporation shall, in the several cities, within six months after the appointment of the officer hereinafter provided for, affix at the points of support at which any such wire or cable containing wires is attached, a tag or mark distinctly designating the owner or user of such wire or cable. No such tag or mark shall be required for the wires of a street railway company used for the transmission of its motive power nor for the protection or support of such wires.

SECTION 3. Every city shall, by ordinance, designate or provide for the appointment of an officer who shall supervise every wire over streets or buildings in such city, and every wire within a building when such wire is designed to carry an electric light or power current ; shall notify the person or corporation owning or operating any such wire whenever its attachments, insulation, supports or appliances are unsuitable or unsafe, or the tags or marks thereof are insufficient or illegible, and shall, at the expense of the city, remove every wire abandoned for use, and every wire which after the six months aforesaid shall be unprovided with a tag or mark, as hereinbefore required, such expense to be repaid by the owner of such wire; and shall see that all laws, ordinances and regulations relating to such wires are strictly enforced.

SECTION 4. Any city may recover, in an action of contract, of the person or corporation owning any such wire as is hereinbefore described, any expense which it may have incurred for any removal thereof.

SECTION 5. Any court having equity jurisdiction or any justice thereof, in term time or vacation, may, on the petition of the officer designated or appointed as aforesaid, by any suitable process or decree in equity enforce the provisions of this act, and may, on such petition, issue an injunction or other suitable process to restrain the use or maintenance, or to cause the removal, of any wire, post or other support erected, maintained or used in violation of this act.

SECTION 6. This act shall take effect upon its passage. [*Approved June* 11, 1890.]

REPORT

OF THE

SCHOOL COMMITTEE.

In compliance with Section 146 of the Rules and Regulations, the Superintendent herewith submits his sixteenth annual report for the year ending December 31, 1890.

Summary of Statistics.

I.—Population.

Population of Cambridge by the State Census for 1890	70,028
Number of children in the city between five and fifteen years of age, May 1, 1890, as reported by the Truant-Officers	11,971

II.—Schools.

1 Latin School, with eight rooms.
1 English High School, with thirteen rooms.
9 Grammar Schools, with one hundred fourteen rooms.
23 Primary Schools, with one hundred rooms.
6 Kindergartens, with seven rooms.
2 Evening Drawing Schools, with two rooms.
1 Evening High School, with six rooms.
3 Evening Schools, with twelve rooms.

Whole number of Day Schools	40
Whole number of separate rooms	242

III.—School-Houses.

For the Latin School	1
For the English High School	1
For the Grammar Schools	10
For both Grammar and Primary Schools	3
For the Primary Schools	20

IV.—Teachers.

Number of teachers in Latin School 10
Male teachers, 3; female teachers, 7.
Number of teachers in English High School 15
Male teachers, 4; female teachers, 11.
Number of teachers in Grammar Schools 121
Male teachers, 12; female teachers, 109.
Number of teachers in Primary Schools 101
Number of teachers in Kindergartens 11
Number of teachers in Evening Drawing Schools, 1889–90 4
Average number of teachers in Evening High School 8
Average number of teachers in Elementary Evening Schools, 1889–90 . 24
Whole number of teachers* in Day Schools, including the teacher of music, the teacher of drawing, the teachers of sewing (2), and the secretary and librarian of the High Schools 263
Number of teachers who have attended Normal Schools 169
Number of teachers who have graduated from Normal Schools 146

V.—Pupils.

Attendance at all the Day Schools, 1886 to 1890.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1886	11,012	9,246	8,530	92.2
1887	11,157	9,429	8,672	92.0
1888	11,496	9,756	8,964	91.9
1889	11,855	9,962	9,141	91.8
1890	11,914	10,089	9,325	92.4

Attendance at the High Schools, 1888 to 1890.

L. stands for Latin School, E. for English High School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1888	L. 247 / E. 343 } 590	L. 228 / E. 304 } 532	L. 217 / E. 290 } 507	L. 95.1 / E. 95.3 } 95.2
1889	L. 239 / E. 397 } 636	L. 217 / E. 345 } 562	L. 207 / E. 331 } 538	L. 95.5 / E. 96.1 } 95.8
1890	L. 224 / E. 473 } 697	L. 204 / E. 409 } 613	L. 199 / E. 396 } 595	L. 96.4 / E. 96.7 } 96.6

*Temporary assistants and members of the training class are counted as seven teachers; the sum of their salaries being equal to the amount paid that number of regular teachers.

Attendance at the Grammar Schools, 1886 to 1890.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1886	5,121	4,440	4,152	93.5
1887	5,334	4,628	4,317	93.3
1888	5,421	4,760	4,427	93.0
1889	5,602	4,864	4,517	92.9
1890	5,668	4,891	4,557	93.2

Attendance at the Primary Schools, 1886 to 1890.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1886	5,330	4,316	3,912	90.6
1887	5,276	4,301	3,877	90.1
1888	5,485	4,465	4,031	90.3
1889	5,617	4,537	4,086	90.0
1890	5,321	4,403	4,011	91.1

Attendance at the Kindergartens.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1890	228	183	163	89.6

Number of Pupils Graduated from, and Admitted to, the High Schools and the Grammar Schools, 1888 to 1890.

L. stands for Latin School, E. for English High School.

Year.	Graduated from High Schools.	Admitted to High Schools.	Graduated from Grammar Schools.	Admitted to Grammar Schools.
1888	L. 22, E. 42 } 64	L. 69, E. 210 } 279	361	1,222
1889	L. 27, E. 52 } 79	L. 91, E. 272 } 363	419	1,168
1890	L. 17, E. 37 } 54	L. 61, E. 240 } 301	398	1,161

Number of Pupils belonging to the Evening Drawing Schools, with the Average Attendance, 1886 to 1890.

1886.	1887.	1888.	1889.	1890.
223	234	216	228	166
106	107	101	120	106

Number of Pupils belonging to the Evening Schools, with the Average Attendance, 1886 to 1890.

1886.	1887.	1888.	1889.	1890.
354	311	356	425	739
145	124	149	181	298

Number of Pupils in the Private Schools in Cambridge, including the Parochial Schools, 1886 to 1890.

1886.	1887.	1888.	1889.	1890.
1,858	1,651	1,785	2,037	2,050

Table showing the Number in each Class in the Latin School, December, 1890.

Class.	Boys.	Girls.	Total.	Per cent.
First	27	16	43	.189
Second	16	16	32	.141
Third	20	17	37	.163
Fourth	25	24	49	.216
Fifth	45	21	66	.291
Total	133	94	227	

Table showing the Number in Each Class in the English High School, December, 1890.

Class.	Boys.	Girls.	Total.	Per cent.
First	17	26	43	.083
Second	33	53	86	.166
Third	60	102	162	.313
Fourth	94	133	227	.438
Total	204	314	518	

Table showing the Number in Each Class in the Grammar Schools, December, 1890.

Grade.	Boys.	Girls.	Total.	Per cent.
Ninth	221	231	452	.085
Eighth	330	382	712	.133
Seventh	373	457	830	.155
Sixth	487	499	986	.184
Fifth	522	484	1,006	.188
Fourth	673	694	1,367	.255
Total	2,606	2,747	5,353	

Table showing the Number in Each Class in the Primary Schools, December, 1890.

Grade.	Boys.	Girls.	Total.	Per cent.
Third	594	589	1,183	.253
Second	742	672	1,414	.302
First	1,112	970	2,082	.445
Total	2,448	2,231	4,679	

Summary of the School Census, as taken by the Truant Officers, May, 1890.

[The Statutes make it the duty of the School Committee annually to ascertain the names and ages of all persons belonging to their respective towns and cities on the first day of May, between the ages of five and fifteen years.]

Number of children in the city five years old or more, but less than fifteen	11,971
Number in Public Schools five years old or more, but less than fifteen	9,584
Number in Public Schools fifteen years old or more, as shown by the school register	1,025
Number in Private Schools five years old or more, but less than fifteen	1,296
Number not attending school five years old or more, but less than eight	678
Number not attending school eight years old or more, but less than fourteen	194
Number not attending school fourteen years old or more, but less than fifteen	219
Whole number not attending school five years old or more, but less than fifteen	1,091
Number in the city five years old or more, but less than six	1,045
Number eight years old or more, but less than fourteen	7,353

VI.—Finances.

[For the financial year ending Dec. 1, 1890.]

Instruction in day schools	$190,558 21
Cost of evening schools	2,773 00
Cost of evening drawing schools	546 00
Text-books and supplies for day and evening schools	15,668 73
Incidental expenses	612 05
Care and repairs of school-houses	36,491 85
Expended on the new High School-House	94,345 35
Expended on the Putnam School-House	32,626 21
Expended on the Morse School-House	25,355 37
Total expenditures for all school purposes	$398,976 77
Deducting receipts from the Hopkins Fund ($712.69) and for tuition of non-resident pupils ($648.00), actual cost of the schools to the city	$397,616 08
Assessed value of real and personal estate, May, 1890	$67,471,925 00
Ratio of expenses for school purposes to the valuation of 1890	.006

Cost of Instruction in the Day Schools, 1876 to 1890.

[Salaries of teachers, superintendent, agent, and truant officers.]

Year.	No. of Teachers January 1.	Average No. of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	$164,818 00	$23 32
1877	174	7,139	151,946 65	21 28
1878	173	7,028	136,491 20	19 42
1879	173	6,957	132,570 49	19 05
1880	182	7,175	130,371 75	18 17
1881	192	7,434	132,501 10	17 82
1882	200	7,898	137,328 55	17 38
1883	212	8,194	144,457 60	17 63
1884	216	8,414	152,290 62	18 09
1885	224	8,650	158,640 13	18 33
1886	233	9,218	165,277 42	17 92
1887	237	9,429	172,135 06	18 25
1888	241	9,756	175,773 80	18 02
1889	251	9,962	180,816 26	18 15
1890	263	10,089	190,558 21	18 89

Cost of the Day Schools, 1876 to 1890.

[The expenditures for new school-houses are not included.]

Year.	No. of Teachers January 1.	Average No. of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	$200,894 09	$28 43
1877	174	7,139	180,974 36	25 35
1878	173	7,028	162,437 77	23 11
1879	173	6,957	158,196 21	22 73
1880	182	7,175	153,967 56	21 45
1881	192	7,434	158,282 84	21 29
1882	200	7,898	166,230 52	21 04
1883	212	8,194	177,149 93	21 62
1884	216	8,414	203,234 56	24 15
1885	224	8,650	206,806 09	23 90
1886	233	9,218	207,536 46	22 51
1887	237	9,429	222,679 19	23 61
1888	241	9,756	225,408 57	23 10
1889	251	9,962	229,421 31	23 03
1890	263	10,089	241,980 84	23 98

Statistics taken from the Fifty-fourth Annual Report of the Secretary of the State Board of Education.

Number of cities and towns: cities, 25; towns, 326	351
Number of public schools.	7,147
Number of pupils of all ages in the public schools during the year	371,492
Number of persons over fifteen years of age attending the public schools	32,814
Per cent. of attendance based upon the average membership	90
Number of persons employed as teachers in the public schools during the year: men, 1,017; women, 9,307; total	10,324
Number of teachers who have graduated from Normal Schools	2,819
Average number of months the public schools have been kept for the entire year	8.17
Number of High Schools	241
Number of teachers in High Schools	814
Number of pupils in High Schools	25,317
Amount expended upon the public schools, exclusive of the expense of school buildings	$6,415,444 51
Cost of new school-houses, permanent improvements, and ordinary repairs	1,870,617 88
Entire expenditure for public school purposes	8,286,062 39

Special Institutions.

The following are the statistics of the attendance and expenses of the Massachusetts pupils in the several schools for the deaf and the blind.

AMERICAN ASYLUM AT HARTFORD, CONN.

Number of Massachusetts beneficiaries, 1889–90	63
Paid for these pupils.	$10,117 19

CLARK INSTITUTION, NORTHAMPTON.

Number of Massachusetts beneficiaries, 1889–90	85
Paid for these pupils	$12,787 65

HORACE MANN SCHOOL, BOSTON.

Number of Massachusetts beneficiaries, 1889–90	95
Paid for these pupils	$9,233 98

PERKINS INSTITUTION FOR THE BLIND.

Number of Massachusetts beneficiaries, 1889–90	97
Annual appropriation from the State	$30,000 00

MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

Number of Massachusetts beneficiaries, 1889–90	124
Annual appropriation from the State	$25,000 00

Cities of Massachusetts arranged according to the Percentage of their Taxable Property Appropriated to the Support of the Public Schools.

For 1889-90, by the State Valuation of 1889.	Cities.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1889-90, by the State Valuation of 1889.	Cities.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	Gloucester	$.004-03	14	Salem	$.003-15
2	Woburn	.003-83	15	Newton	.003-09
3	Malden	.003-75	16	Lowell	.003-09
4	Waltham	.003-62	17	Holyoke	.003-07
5	Quincy	.003-52	18	Worcester	.003-04
6	Taunton	.003-52	19	Lynn	.002-97
7	Haverhill	.003-50	20	Fall River	.002-94
8	Somerville	.003-50	21	New Bedford	.002-80
9	Fitchburg	.003-41	22	Springfield	.002-68
10	Chelsea	.003-32	23	Lawrence	.002-67
11	Northampton	.003-25	24	Newburyport	.002-16
12	Brockton	.003-21	25	Boston	.001-95
13	Cambridge	.003-19			

Towns and Cities of Middlesex County.

For 1889-90, by the State Valuation of 1889.	Towns and Cities.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.	For 1889-90, by the State Valuation of 1889.	Towns and Cities.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mills.
1	Wilmington	$.004-86	28	Somerville	$.003-50
2	Marlborough	.004-85	29	Melrose	.003-36
3	Westford	.004-67	30	Pepperell	.003-28
4	Natick	.004-42	31	Framingham	.003-26
5	Stoneham	.004-39	32	Boxborough	.003-24
6	Holliston	.004-29	33	Cambridge	.003-19
7	Ashby	.004-08	34	Maynard	.003-17
8	Wakefield	.004-06	35	Watertown	.003-16
9	Ashland	.003-99	36	Lowell	.003-09
10	Hudson	.003-97	37	Newton	.003-09
11	Ayer	.003-89	38	Sherborn	.003-07
12	Medford	.003-85	39	Tyngsboro'	.003-04
13	Arlington	.003-83	40	Everett	.002-88
14	Chelmsford	.003-83	41	Lexington	.002-85
15	Woburn	.003-83	42	Tewksbury	.002-76
16	Hopkinton	.003-81	43	Bedford	.002-68
17	Littleton	.003-78	44	Carlisle	.002-62
18	Malden	.003-75	45	Belmont	.002-58
19	Reading	.003-73	46	Weston	.002-58
20	Shirley	.003-66	47	Sudbury	.002-49
21	Waltham	.003-62	48	Dunstable	.002-48
22	Winchester	.003-61	49	Billerica	.002-36
23	North Reading	.003-58	50	Stow	.002-36
24	Wayland	.003-58	51	Burlington	.002-31
25	Concord	.003-56	52	Dracut	.002-19
26	Townsend	.003-53	53	Lincoln	.001-84
27	Acton	.003-52	54	Groton	.001-83

TABULAR VIEW.

JANUARY 1, 1891.

Prepared by the Secretary of the School Committee.

Names of Schools	Teachers.	Salaries.	No. of Pupils Jan. 1, 1891.
Latin School	William F. Bradbury	$3,000	227
	Theodore P. Adams	2,000	
	Charles W. Parmenter	1,500	
	Helen M. Albee	950	
	Charlotte C. Barrell	950	
	Marion Bradbury	950	
	Caroline Drew	570	
	Margarette M. Leighton	950	
	Emma M. Sawyer	875	
	Jennie S. Spring	950	
English High	Frank A. Hill	3,000	518
	Edwin L. Sargent	2,000	
	Charles H. Morse	1,500	
	Charles F. Warner	1,500	
	Clara A. Armes	950	
	Harriet E. Bird	950	
	Carrie Close	950	
	Myra I. Ellis	875	
	Mary Moulton	800	
	Louisa P. Parker	950	
	Caroline A. Sawyer	950	
	Emma A. Scudder	950	
	Martha R. Smith	950	
	Maria E. Spare	950	
	Delia Stickney	1,050	
Allston	Benjamin W. Roberts	2,000	586
	Mary I. Vinton	700	
	Susan M. Adams	620	
	Sara A. Bailey	620	
	Mary Blair	620	
	Mary M. Brigham	620	
	Hattie B. Johnson	620	
	Evelyn B. Kenney	620	
	Melissa M. McKinley	620	
	Emily R. Pitkin	620	
	Ida G. Smith	620	
	Carrie M. Williams	620	
Harvard	James S. Barrell	2,000	776
	Arthur A. Lincoln	1,000	
	Ada H. Wellington	700	
	Margaret B. Wellington	700	
	Addie L. Bartlett	400	
	Theresa C. Bartlett	620	
	Elizabeth L. Buckley	470	
	Emily F. Damon	620	
	Ella S. Danforth	620	
	Mary F. Emerson	620	
	Frances Fabyan	620	
	Estelle J. French	620	

Tabular View.—*Continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1891.
Harvard	Eliza S. Getchell	$620	
	Etta M. Houghton	620	
	Susie G. Lumbert	470	
	Annie M. Street	570	
	Hortense O. Young	620	
Peabody	Frederick S. Cutter	1,600	267
	Susan Allison	470	
	Anna F. Bellows	620	
	Abbie L. Chapman	620	
	Addie F. Cleary	470	
	Charlotte A. Ewell	620	
	Martha N. Hanson	620	
Putnam	Thomas W. Davis	2,000	563
	Frederick W. Eveleth	1,000	
	Eliza M. Hussey	700	
	Annetta Bruce	620	
	Mary A. Carmichael	470	
	Lydia B. Collier	570	
	Anna M. Dormer	620	
	Sarah M. Grieves	620	
	Annie B. Josselyn	620	
	Louise A. Keeler	620	
	Augusta G. Mirick	620	
	Eliza S. Paddack	620	
	Louise A. Stickney	620	
	Mary M. Sullivan	620	
Shepard	Edward O. Grover	2,000	486
	Nellie A. Hutchins	700	
	Mary A. Bosworth	620	
	Harriet V. Dever	570	
	Emma A. Falkner	620	
	Emily F. Fessenden	620	
	Harriet Foster	620	
	Ellen J. Hunt	620	
	A. Estelle Ingraham	620	
	Flora C. Ingraham	620	
	Evelyn J. Locke	620	
	Clara A. Peterson	620	
Thorndike	Ruel H. Fletcher	2,000	575
	Harriet A. Townsend	700	
	Laura Emmel	470	
	Grace W. Fletcher	620	
	Emma A. Hopkins	620	
	Abby A. K. Howard	620	
	Elizabeth G. Hutchinson	620	
	Martha A. Martin	620	
	Mary E. Nason	620	
	S. Louise Regal	620	
	Abby S. Taylor	620	
	Laura S. Westcott	620	
	Lydia A. Whitcher	620	
Washington	John W. Freese	2,000	562
	Annie E. Whittier	700	
	Eldora J. Clark	620	
	Lucy A. Downing	620	
	Mary L. Ells	620	
	Alice P. Fay	520	
	Adeline M. Ireson	620	

Tabular View. — *Continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1891.
Washington	Adelaide A. Keith	$620	
	Winifred L. Kinsley	520	
	Margaret J. Penney	620	
	Hattie Shepherd	620	
	Mary E. Stiles	620	
	Abby M. Webb	620	
Webster	John D. Billings	2,000	899
	Arthur N. Whitney	1,000	
	Mary E. Towle	700	
	Mary A. Townsend	700	
	Amy H. Bateman	400	
	Ada A. Billings	570	
	Ella E. Buttrick	620	
	Charlotte M. Chase	620	
	Annie Marion Dow	570	
	Susan I. Downs	620	
	Nellie C. Duley	570	
	Anna M. Ford	520	
	Josie F. Lamprey	620	
	Anna S. Lamson	620	
	Georgia E. Lancaster	620	
	Gertrude A. Long	620	
	Ruth D. Loring	400	
	Alice C. Phinney	620	
	Minnie V. Reid	520	
	Hattie E. Shepard	400	
Corlett	Fannie P. Browning	630	76
	Ellen A. Kidder	400	
Agassiz. { Grammar. Primary.	Maria L. Baldwin	650	{ 130 168
	Mary G. Carpenter	620	
	Augusta M. Houghton	620	
	Rosina C. Karcher	620	
	Gertrude E. Sackrider	470	
Boardman	Mary A. Lewis	660	364
	Christine R. Denyven	570	
	Mary Alice Gregg	570	
	Nellie E. Hastings	620	
	Elizabeth J. Karcher	620	
	C. Florence Smith	570	
	Sarah E. Stewart	620	
Bridge	Elizabeth E. Dallinger	630	77
	Emily C. Dallinger	620	
Cushing	Isadore I. Foster	630	80
	Ida B. Holt	620	
Dana	Maria F. Williams	640	147
	Emily J. Allen	570	
	Cordelia J. French	620	
	Abby A. Lewis	620	
Dunster	Susan E. Wyeth	640	111
	Nellie M. Colby	620	
	Lizzie B. Shepherd	620	
Felton	Sarah J. Gunnison	640	180
	Louise M. Britton	520	
	Fanny C. Hartwell	620	
	Minnie F. Munroe	620	
Gannett	Sarah J. A. Davis	640	162
	Anna M. Jones	620	

Tabular View.— *Continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1891.
Gannett	Mary A. Rady	$620	
	Carrie H. Smith	620	
Gore	Frances E. Pendexter	680	542
	Ella R. Avery	620	
	Addie M. Bettinson	620	
	Anna E. Callahan	620	
	Sarah A. Conlan	400	
	Addie H. Dale	400	
	Elizabeth B. Gahm	620	
	Katie L. McElroy	520	
	Mary C. McNally	520	
	Mary E. Mulloney	620	
	Emma J. Ross	620	
Holmes	Marianne M. Webb	635	112
	Ellen M. Cyr	620	
	Isabel Foster	620	
Lassell	Nellie F. Ball	640	219
	Rose V. Collier	520	
	Cora A. Reycroft	620	
	Frances E. Whoriskey	620	
Lowell	Lucy E. Cyr	620	87
Mason	M. Lizzie Evans	630	116
	Lizzie J. Baldwin	620	
Otis	Ellen N. Leighton	660	386
	Fannie Allen	620	
	Martha H. Butler	620	
	Rose V. Collier	400	
	Josephine M. Doherty	620	
	Luella M. Marsh	620	
	Ellen C. Walsh	620	
	Kate F. Wellington	620	
Quincy	Charlotte E. Jewell	630	82
	Lucy C. Wyeth	620	
Reed	Margaret Kidd	640	180
	Margaret T. Burke	520	
	Harriet N. Keyes	620	
	Julia A. Robinson	570	
Riverside	Elizabeth A. Tower	640	124
	Amanda M. Alger	620	
	Mary A. Burke	620	
Sargent	Mary A. Brown	640	170
	Christina D. Barbey	620	
	Thyra C. Kalberg	520	
	Ella M. Leaver	570	
Stearns	Helen M. Ward	640	192
	Maria J. Bacon	620	
	Ellen A. Cheney	620	
	Eva A. Taylor	620	
Tarbell	Emma J. Young	640	194
	Mary A. Davis	620	
	Nellie F. McCarthy	620	
	Julia S. Gushee	620	
Willard. { Grammar. / Primary.	Amelia Wright	680	{ 101 / 515
	S. N. Chamberlain	620	
	Belle F. Gulliver	620	
	Mary E. G. Harrington	620	
	Louise W. Harris	620	

Tabular View.—*Continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1891.
Willard	Kate M. Lowell	$620	
	S. Agnes Mulloney	570	
	Emma C. Otis	620	
	Carrie P. Pierce	400	
	Mary E. Sawyer	620	
	Eliza D. Watson	620	
	Grace R. Woodward	620	
	Laura Wright	620	
Wyman	Fannie E. M. Dennis	645	251
	M. Carrie Dickman	620	
	Georgiana B. Dutcher	620	
	Cyrene L. Flint	470	
	Mary M. Gilman	620	
Wellington { Gram. / Prim.	Herbert H. Bates	2,000	{ 332 / 220
	Lelia A. Mirick	800	
	Training Class	3,000	
Kindergartens. Boardman.	Caroline C. Voorhees	620	58
	Grace Mulloney	400	
Dunster	Helen Willson	620	31
Riverside	Ellen I. Hutchison	620	60
	Martha Adams	400	
Moore St.	Harriet E. Ryan	620	53
	Mabel Eddy	520	
Gore	Selma E. Berthold	620	59
	Mary Burnett	400	
Lowell	Linda Gates	620	41
	Alice S. Brown	400	

Director of Music—Frederick E. Chapman	$1,500
Director of Drawing—Walter F. Brackett	1,700
Secretary and Librarian of the High Schools—	
Mattie L. Babbitt	500
Superintendent—Francis Cogswell	3,000
Agent—Sanford B. Hubbard	1,500

The Wellington School is a training school, composed of grammar and primary pupils, taught by young ladies, graduates of Normal Schools and candidates for the office of teacher, under the direction and with the assistance of the master of the school and his assistant.

Temporary assistants and members of the Training Class are counted as seven teachers, the sum of their salaries being about equal to the amount paid to that number of regular teachers.

The post-office addresses of the several schools are as follows:

Cambridge — Peabody,* Washington,* Agassiz, Dunster, Holmes, Lowell, Quincy, Riverside.

Cambridgeport — Latin, English High, Allston,* Harvard,* Webster,* Boardman, Bridge, Dana, Felton, Gannett, Mason, Sargent, Stearns, Tarbell, Wellington, Willard.

East Cambridge—Putnam,* Thorndike,* Gore, Lassell, Otis.

North Cambridge—Shepard,* Reed, Wyman.

Mount Auburn—Corlett,* Cushing.

* Grammar Schools.

Summary.

Number of pupils in Latin School	227
Number of pupils in English High School	518
Number of pupils in Grammar Schools	5,353
Number of pupils in Primary Schools	4,679
Number of pupils in Kindergartens	302
	11,079
Number of pupils belonging to the Public Schools, Jan. 1, 1890	10,711
Increase	368
Average annual increase of pupils from 1860 to 1880 (inclusive)	219
Increase of pupils, 1881	403
Increase of pupils, 1882	448
Increase of pupils, 1883	280
Increase of pupils, 1884	165
Increase of pupils, 1885	589
Increase of pupils, 1886	267
Increase of pupils, 1887	371
Increase of pupils, 1888	173
Increase of pupils, 1889	249
Increase of pupils, 1890	368
Number of Schools	40
Number of School-rooms	242
Number of Teachers	263

Cost of Instruction.

Latin School	$12,607 41	For each pupil	$55 54
English High School	17,962 50	" " "	34 68
Grammar Schools	83,187 06	" " "	15 54
Primary Schools	60,435 49	" " "	12 92
Kindergartens	4,465 25	" " "	14 78
Substitute Teachers	340 50		
Teachers of Sewing	960 00		
Director of Music	1,700 00		
Director of Drawing	1,700 00		
Superintendent	3,000 00		
Agent	1,500 00		
Truant Officers	2,700 00		
	$193,877 21	For each pupil	$17 50
Cost of instruction in Evening Schools			$2,773 00
Cost of instruction in Drawing Schools			$546 00

Remarks on the Statistics.

The increase over the last school year in the number of pupils registered is 59; in the average number belonging, 127; in the average daily attendance, 184. In the per cent. of attendance there has been an increase of six-tenths of one per cent. The number belonging to the schools in December, 1889, was 10,711; in December, 1890, 11,079; an increase of 368. The entire cost of the day schools, excluding the expenditure for new school-houses and new furniture, exceeds that of last year by $12,559.53, and the cost per pupil by 95 cents. In the entire cost of instruction the increase is $9,741.95; an increase in the cost per pupil of 74 cents. While Cambridge expends a large amount for her schools, there are *two hundred and seventeen* towns and cities in the State which make a larger expenditure in proportion to their wealth. In a list of the twenty-five cities, arranged numerically according to the percentage of their taxable property appropriated to the support of public schools for the year 1889–90, Cambridge is the *thirteenth*, and compared with the fifty-four towns and cities of our county, Cambridge is the *thirty-third*. In a list of the towns and cities of the State, arranged numerically according to the sum appropriated for each child between five and fifteen years of age, Cambridge is the *thirty-eighth*.

These statistics relating to the schools of the State are taken from the fifty-fourth annual report of the Secretary of the Board of Education.

School Accommodations.

A larger expenditure for school buildings has been made the past year than during any previous year in the history of Cambridge. The exact amount is $152,326.93. One of these buildings, the Putnam, was completed in season to be occupied at the opening of the schools in September; and it is expected that the others, the Morse school-house in Ward Four and the new English High School building, will be ready for use at the beginning of the next school year.

The Putnam school-house is located in Ward Three, at the corner of Otis and Fourth streets, where the former building of the same name stood, on the site of old Fort Putnam. It is a plain brick building 116 feet long and 91 feet wide, on the

ground plan, with one corner about forty feet square left out. The building is three stories high and contains thirteen school rooms, varying in length from 31 to 33 feet, and in width from 27 to 31 feet, all the rooms being 12 feet high. It also contains a hall, 64 feet by 37 feet, with a recess of 6 feet by 25 on one side for a part of the platform; a master's room and a teacher's private room, each 16 feet by 10 feet, and the usual conveniences of cloak-rooms, store-rooms, and closets found in modern school-houses. It was dedicated with appropriate exercises on the 30th of October. Among those who took part in the exercises was the Rev. Artemas B. Muzzey, D.D., a member of the School Committee in 1840, and the writer of the report for that year.

A new school-house is needed to take the place of the one on Pioneer Street, which is entirely unfit for school purposes. In the near future the Wellington school-house should be enlarged to accommodate the rapidly increasing number of children in that section of the city; but no new work should be undertaken until the buildings now in process of erection are completed. During the year the school-houses have been inspected and all needed repairs attended to; and in several instances important changes have been made for the purpose of improving their sanitary condition. A very decided improvement has been effected in the basement of the Gore school-house, and in the ventilation of the school-rooms in the Felton.

The School Committee gladly bear testimony to the interest shown by the Committee on Public Property and the Superintendent of Public Buildings in making such changes in our school-houses as will be for the health and comfort of those who occupy them. This year a larger amount of work than usual has fallen to this Committee and the Superintendent of Public Buildings; but it has received their prompt attention and has been done in the most efficient manner.

Changes in the Corps of Teachers.

Resignations and appointments have been as follows:—

Latin School — 0 resignations, 1 appointment.
English High School — 1 resignation, 1 appointment.
Grammar Schools — 10 resignations, 11 appointments.
Primary Schools — 3 resignations, 3 appointments.

Kindergartens — 0 resignations, 3 appointments.
Sewing — (work began in February) 2 appointments.
Music — resignation, Nathan Lincoln; appointment, Frederick E. Chapman.

The resignations and appointments here given are those of a permanent character. Teachers out of school on leave of absence, and those appointed to take their places, are not included in these numbers.

Mr. Lincoln and His Work.

It seems appropriate that an account of Mr. Lincoln's connection with the schools should be given in this report. He was appointed teacher of music in 1850, and his services ended December 31, 1890. He has the honor of having held the position of singing master in the public schools of one town or city longer than any other person in this country. The estimation in which he and his work have been held by the Committee will be seen by the following extracts from the school reports, written during the forty years of his services in the schools:—

"We deem the city highly favored in securing the services of a gentleman of so much musical ability, of such untiring industry, and of such courtesy as Mr. Lincoln possesses."

"The success which has attended the efforts of Mr. Lincoln has been remarkable. . . . Mr. Lincoln's profession has been well chosen; he is not only distinguished for his musical abilities and acquirements, but he has also a very happy manner of imparting instruction which contributes not a little to his success."

"We again congratulate the citizens on the thoroughness and success with which the delightful art of music is taught in the schools. Mr. Lincoln is not only a proficient and enthusiast in his profession, but he has remarkable tact in imparting instruction and managing his pupils."

"In Mr. Lincoln, we have a teacher eminently qualified to give instruction in music. He is a master of the science, and is devoted to his profession. It his presence the spirits of dullness and discord take their flight, and, by a sort of magnetic influence, he inspires a whole school with life and enthusiasm."

"Mr. Lincoln combines in a peculiar manner the requisites for his position. If ever the right man was in the right place, he is. . . . Our public school singing is not mere outside display, but rests on a basis of sound and systematic training."

"The instruction in music has been in charge of Mr. Nathan Lincoln for seventeen years, and is now given in thirty different schools. The Committee recommend that, in view of the amount of work required, and of his long and faithful services, the salary of Mr. Lincoln be increased."

"The lamented Dr. Mason, for many years Chairman of the Music Committee, after spending several days with the singing-master in a careful examination of the schools, made a verbal report to the Board, in which he expressed

his great satisfaction at what he had seen, and his high appreciation of the results everywhere apparent."

"The Committee on Music has examined the work in this department, by being present at lessons given in each of the grammar and in several of the primary schools, and it would unhesitatingly report that the instruction in music is as thorough and successful as in any branch taught in our schools. The pupils learn to sing, not by rote, but accurately at sight in three or four parts, and to write correctly and readily in the only universal language, that of music."

"That the singing in the grammar schools was never in better condition than it is at the present time (1883) is partly due, so far as the boys are concerned, to the fact that they are able now to realize that music means business as well as pleasure and honor. There are fifty boys belonging to these schools who are members of choirs in Boston, Cambridge, and the vicinity."

"Instruction in music is a very different thing from that in former days. It shares in the progress made by teaching in general. A piece of music in three parts, which, twenty years ago, would have required, at least, ten lessons in a grammar school, can today be learned by the scholars in fifteen minutes, and rendered in better time, tune, and style."

Mr. Lincoln's letter of resignation was as follows:—

CAMBRIDGE, Oct. 16, 1890.

To the School Committee of Cambridge:—

The period long since fixed upon by me as the goal of my course here having arrived, I now tender my resignation as singing-master to take effect November 30th, or upon the appointment of another teacher.

Near the close of a term of service so protracted as to be without precedent, I believe, in the history of my profession, it becomes me to remember with gratitude the unvarying kindness I have experienced from the School Committee, the teachers, the pupils, and the community at large during forty years connection with the schools of Cambridge.

May I not bespeak for my successor the same friendly consideration, which has proved alike grateful to my own feelings, and helpful towards whatever measure of success may have been attained in this department of public instruction.

Respectfully,

NATHAN LINCOLN,
Singing Master.

By vote of the Committee it was ordered, "That Mr. Lincoln's letter be spread upon the records, and that his resignation be accepted."

At a subsequent meeting the following preamble and resolutions were unanimously adopted, and it was voted, "that a copy thereof, suitably engrossed, be sent to Mr. Lincoln."

"The resignation of a teacher, who for forty years has received the approval and commendation of the successive School Committees of that long period, and especially, as in the present case, when his term of service is nearly commensurate with that of the department in which his services have been rendered, is worthy of more than a passing notice: therefore,—

"*Resolved*, that the present satisfactory condition of music in our schools is largely due to the faithful, judicious, and long continued services of Mr. Lincoln, and his cordial coöperation with the several committees under whose direction he has acted.

"*Resolved*, that his influence in the schools has extended beyond the special department of music ; that his scholarship, his intelligent methods, his gentlemanly bearing, his pleasant relations with teachers and pupils, and above all his character, have enabled him to exert an influence in the schools, and through them in the community, which can hardly be overestimated."

The Superintendent of Schools in speaking of Mr. Lincoln's resignation, said :—

"The instruction in music has been under the supervision of one teacher from 1850 to the present time. In the beginning the teaching was essentially rote teaching, but with the increasing interest in the study of music the instruction became more and more scientific in its character, and it has kept pace with the advanced methods of instruction in all other branches. Fortunate, indeed, has the city been in its teacher of music. With rare qualities of mind and heart, with unquestioned knowledge of the subject he has taught, with devotion to his chosen profession, Mr. Lincoln has gone from school to school these forty years, faithfully and successfully doing his work, respected and beloved by teachers and pupils alike."

New Text-Books.

The text-books adopted during the year are :—

For the Latin School, — Gray's School and Field Book of Botany (revised edition) Chamisso ; Harper's Cæsar (text edition) ; Wilhelm Tell (Schiller) ; Hermann and Dorothea (Goethe) ; Fiske's Civil Government ; Harris's Selections for German Composition.

For the English High School,— Gray's School and Field Book of Botany (revised edition) Chamisso ; Young's Elements of Astronomy ; Williams's Introduction to Chemical Science : Wilhelm Tell (Schiller) ; Hermann and Dorothea (Goethe) ; Wentworth's New Plane Geometry ; Fiske's Civil Government ; Harris's Selections for German Composition.

For the Grammar Schools, — Lippincott's Readers (New Series) ; Metcalf's Spelling-Book ; Metcalf's Language Lessons ; Harrington's Graded Spelling-Book ; Hiawatha ; Eggleston's First Book in History.

For the Primary Schools, — Lippincott's Readers (New Series) ; Cogswell's Number Lessons.

For Desk and Reference Books in the High Schools and Grammar Schools, — European Schools (Klemm).

Text-Books and Supplies.

At the meeting of the Board in December, the Committee on Supplies submitted a detailed report of the expenditures of that Committee for the year.

This report was accepted, and it was voted that it be incorporated in the annual report of the School Committee. The report, with the omission of the names of the firms and individuals among whom the expenditures were divided, is as follows:

The Committee on Supplies begs leave to submit the following report of its doings for the school year ending June 27, 1890; being the sixth annual report of this Committee to the Board:—

Stock on hand July 3, 1889		$2,109 39
Purchases and expenditures to July 2, 1890		14,199 72
Total		$16,309 11
Delivered to the Overseers of the Poor	$3 45	
Sold for cash to pupils	98 41	
Delivered to Schools and Officers	14,439 45	
		15,541 31
Stock on hand July 2, 1890		$1,767 80

The purchases and expenditures have been: —

For text-books	$6,985 24	
Miscellaneous supplies	2,670 42	
Desk and reference books	682 99	
Apparatus and furnishings	1,111 51	
Drawing and writing books	1,603 36	
Printing ($328.05); expressage ($208.23)	536 28	
Diplomas ($90.48); repairing books ($73.33)	163 81	
Tuning pianos ($12.50); book covers ($433.61)	446 11	
	$14,199 72	
Deducting the value of books and supplies delivered to Schools and Officers, as above		$14,439 45
The sales in the High Schools	$82 25	
The damages collected	52 53	
And profit on sales from the office	7 89	
		$142 67
We have, net cost of all Schools and Officers		$14,296 78

or an average cost, per pupil, of $1.334, against $.96 for the year 1889; $1.068 for the year 1888; $1.051 for the year 1887; $1.17 for the year 1886; and $1.88 for the year 1885.

With reference to the increase in the cost this year over last, it is only necessary to quote from the last report of the Committee the prediction therein made that last year's average would be exceeded, "because many books were left in the schools, which would have been discarded as unfit for further use and have been replaced by new, had our appropriation been large enough to allow such action," and to state that 6,186 books have been discarded and replaced by new this year, against 8,530 for the preceding five years.

Of the books discarded this year, 3,125 have been used as exchanges, in part payment of the new books, to the value of $413.04, and others sold for paper stock, in exchange for stationery, to the value of $45.44.

The cost of each grade of schools for text-books and supplies is as follows:—

	Net Expense.	Average per Pupil.			
		1890.	1889.	1888.	1887.
High Schools	$3,613 89	$5.362	$4.054	$3.944	$3.842
Grammar Schools	7.725 17	1.618	1.071	1.367	1.363
Mixed Schools	782 25	.985	.746	.953	.736
Primary Schools	1,221 04	.286	.276	.240	.197
Evening Schools	262 21	.....	.....	.....	.....
Special Teachers: Sewing $81 05; Music 57 98; Drawing 17 99; Kindergartens 22 24	179 26	.....	.....	.....	.....
Miscellaneous expenses (not chargeable to any grade)	512 96	.....	.....	.....	.....
	$14,296 78	$1.334	$.960	$1.068	$1.051

As already said, the increased average expense this year over last is due to the larger expenditures for books; but with reference to the increase, year by year, of the average in the High Schools, the Committee would note that it has been largely due to the purchase of additional apparatus, made necessary by the more extended use of the experimental method of teaching physics and chemistry.

The Committee desires to express its sense of obligation to

the teachers for their assistance in the care of the books and supplies in the school-room, since the economical use thereof is largely the result of their personal attention. For the agent, upon whom devolves the numberless details of the work of the Committee, we can only repeat the commendations of previous years. The city is fortunate in having in this position one who thoroughly understands its duties, and works early and late to perform them.

1840 — School Reports — 1890.

In the office of the Superintendent of Schools there is now a complete set of the reports of the School Committee from 1840 to the present time. These reports not only contain information about the schools, but, as was said in a former reference to the subject, they are rich in the discussion of educational questions. As these reports are not easily obtained, it has seemed to the Superintendent desirable that the important facts relating to the schools during these fifty years should be brought together and so arranged as to be of value for future reference, and that portions of the earlier reports be reprinted. The remaining part of this report will therefore be of a historic character.

Grades and Classification.

In the report for 1840 we read that "the entire number of public schools in Cambridge is nineteen, divided by a system of gradation into five classes, viz., Alphabet, Primary, Middle, Grammar, and a High School." This gradation continued until 1863, when the Middle Schools were consolidated with the Grammar Schools, and the Alphabet Schools with the Primary. The report for that year says: "By this arrangement it is hoped that much time will be saved, and it is certain that none can be lost, as before was done, in passing from the first to the second grade, and from the third to the fourth. But to secure all the improvement that is desired, it is necessary that all the scholars should be promoted as rapidly as possible, and that the brighter ones should never be allowed, still less compelled, to wait for the regular promotion of the class. If the teachers understand that their success will be estimated more by the number of the promotions which have been made from their classes than by the appearance of those who are left on examination day, they will be encouraged to urge their pupils on faster. And by urging we mean no injurious pressure. A brisk and

lively march, straight onward, is much healthier for the children than dull lagging, with much repetition of a too familiar round which has nothing to task the mind or stimulate the curiosity."

"Besides reducing the number of grades in the inferior schools, the Committee have introduced a uniform classification, dividing all the Grammar Schools into six classes, and the Primary into four besides the Alphabet Class. For each class in both schools they have prescribed a definite course of study, so that henceforth the degree of advancement of the children in any class will be nearly the same at the same time in all the schools."

It appears that at this time (1863) the primary schools were divided into five classes, and that the pupils spent from four to five years in doing the required work. In 1870, however, a plan of study was adopted covering a period of three years, and from that time to the present in the primary schools, and since 1863 in the grammar schools, no change in classification except in names has been made. By the new rules adopted September, 1890, instead of calling the highest class in the primary and the grammar schools the *first class*, as formerly, the lowest class in the primary schools is called the *first grade*, and in the grammar schools, the *fourth grade*, the highest class in the primary schools being the *third grade*, and in the grammar schools the *ninth grade*. In March, 1886, the Classical and English Departments of the High School were made two separate schools. In the Latin School there are five grades, in the English High School four; and the highest class in each school is called the *first class*. In September, 1889, the kindergartens, established and maintained for eleven years by Mrs. Quincy A. Shaw, were adopted as a part of our school system.

High Schools.

The school report for 1846 contains the following: "It is hoped that the proposed arrangement of one High School for the whole city, in some central location, will go into operation as soon as practicable, and that then the High School of Cambridge will be furnished with all the means requisite to a complete High School education. Hitherto our High Schools have had no libraries and almost no apparatus, and, being two or three in number and *mixed* in character, they have not possessed the advantages which a school of this grade deserves. If it is settled, as we suppose it is, that there shall be one, and only one, High School for the whole city, the sooner a suitable building is erected and fitted up for the purpose the better. We can see inconvenience and loss, but no

advantage, from a delay. Indeed, it is difficult, under present circumstances, to give our children that complete English education, and that thorough classical instruction which the standing of Cambridge and its schools would justly lead our citizens to demand."

From the "History of the Cambridge High School" we learn that in 1838 a Classical or High School was established for the whole town, and that a building was erected for it at the corner of Winsor Street and Broadway. This location, it appears, was not found convenient for the population. Classical instruction was, therefore, in 1843, re-established in the Grammar School in Old Cambridge. It was also given in East Cambridge in the Otis School, and was continued in the High School at the Port. After a trial of this plan for four years, a High School for the whole city was again organized in the autumn of 1847, in the High School house originally built for this purpose in 1838; but high school instruction was continued in the Grammar School in Old Cambridge until the following year.

In 1848 a new building was erected on Amory Street, and here the school remained until its removal in 1864 to the school-house built for it on Fayette Street. This was its home for more than twenty years, but during the latter part of the period it became necessary to occupy two or three rooms in other school buildings.

March 1, 1886, the Classical and English Departments were made two separate schools, called, respectively, "The Cambridge Latin School" and "The Cambridge English High School." The former was removed to a building provided for it on Lee Street, and the latter remained in the old home on Fayette Street. A new building located near the Public Library is in process of erection for the English High School. If completed according to contract, it will be occupied at the beginning of the next school year, September, 1891. The Latin School will then be transferred to the present English High School building on Fayette Street. For the past two years both the Latin School and the English High School have required rooms in other buildings to accommodate the pupils. The number of pupils in the Latin School at the present time is 227; in the English High School 518, of whom 116 are also connected with the Manual Training School.

William F. Bradbury, the head master of the Cambridge High School at the time of its division into two schools, and who had been connected with the school for thirty years as sub-master or head master, continued in charge of both schools till the close of the school year. In September,

1886, he became head master of the Latin School, and Frank A. Hill, of the English High School.

A list of the teachers at the present time is given in the "Tabular View." A complete list from 1847 to 1881 can be found in the "History of the Cambridge High School," published in 1882.

The Hopkins Fund.

In 1839, the Legislature authorized "the trustees of the charity of Edward Hopkins," who was the second governor of the Connecticut colony, "to establish in the town of Cambridge a classical school, the main object of which shall be to prepare boys for admission to Harvard University," and "to apply one-fourth part of the net income of their funds to the support of said school." This school was accordingly established. It was provided, however, in the act above referred to, that at any time thereafter, when the school should "cease to be supported in said town, the trustees shall annually pay over the said fourth part of the net income of their funds to the treasurer of the town of Cambridge, on condition that the said town of Cambridge shall provide and maintain a school, and perform and comply with the other duties and provisions contained in the next section of this act." The next section is as follows: "The town of Cambridge shall annually apply so much of said income as may at any time hereafter be paid to the treasurer thereof, in pursuance of the preceding section, to the instruction of nine boys in the learning requisite for admission to Harvard University; the said instruction to be furnished in a public school in said town, the instructor of which shall be at all times competent to give such instruction; and said town shall, so long as said income shall continue to be paid, receive into said school, and admit to all the benefits, privileges, and advantages thereof, free of expense, any number of boys not exceeding nine at any time, who, being properly qualified, shall be selected and presented for admission thereto, by the President and Fellows of Harvard College, and the minister of the First Church in Cambridge, who shall be the visitors of said school for the purpose of seeing that the duties and provisions in this section are duly complied with and performed." In 1854, the trustees proposed to the city to discontinue the Hopkins School, and, pursuant to the provisions of the statute above recited, to transfer to the city that portion of the income of their fund which had been previously applied to the support of that school. This proposition was accepted by the city, which thereby assumed the obligations above quoted, and the

School Committee of that year immediately acted in fulfillment of those obligations by appointing a Hopkins classical teacher.

A full account of the funds received from the estate of Edward Hopkins was given in the School Report for 1885.

Grammar Schools.

The number of grammar schools in Cambridge is nine, viz.: the Allston, Corlett, Harvard, Peabody, Putnam, Shepard, Thorndike, Washington, and Webster. The number of pupils in these schools is 5,353, and the number of teachers 121, not including the director of music and the director of drawing.

The Allston School.—This school was established in June, 1848, under the name of the Broadway Grammar School. It occupied for ten years the school-house at the corner of Broadway and Winsor Street. In 1858, it was transferred to a new school-house built for it on Boardman Street, and its name was changed to the Allston School. In 1873, the school-house was remodelled, the "single room system" being substituted for large school-rooms, with recitation rooms leading from them.

Benjamin W. Roberts has been the master of the school during the forty-two years since its organization.

Lizzie B. Winnett was the master's assistant from 1874 to 1881. Mary I. Vinton, the present assistant, was elected March, 1882. Before her election to this position she had occupied it for nearly a year as one of the regular teachers in the school.

The Corlett School.—This became one of the grammar schools of Cambridge in September, 1880. It was one of the two schools in that part of Belmont which was annexed to Cambridge. It was named the Corlett School by the Cambridge School Committee "to commemorate the services of the first schoolmaster in Cambridge, Elijah Corlett, who for half a century was the sole grammar master in town." It is a school of less than a hundred pupils, under the instruction of two teachers. The school-house is a wooden building on Holworthy Street.

Fannie P. Browning is the principal of the school, and was one of the teachers at the time it became a Cambridge school.

The Harvard School.—This school, once a part of the Mason School, was first known by this name in 1841, when it took possession of the school-house built for it on Harvard Street, nearly opposite Essex Street. In March, 1843, this school-house was burned, but another was built on the same foundations before the close of the year. For nearly

thirty years this school-house was the home of the Harvard School. In 1872, the school was removed to the brick building erected for it at the corner of Broadway and Inman Street.

Aaron B. Magoun, appointed master of the Mason School in 1839, became the master of the Harvard School at the time of its organization, and continued in service till April, 1881. He was succeeded by James S. Barrell, the present master, who was transferred from the Putnam School.

H. Augusta Dodge was master's assistant from 1874 to 1877. From 1876 to 1878 there were two master's assistants in this school. Ada H. Wellington was elected September, 1876, and has continued to hold the position to the present time. Margaret B. Wellington served from 1877 to 1878. Since 1878, under the rules of the Committee, only one master's assistant in each grammar school can be elected.

Frederick S. Cutter was appointed sub-master in 1886, and held the position from 1886 to 1889. He was succeeded by Arthur A. Lincoln, the present incumbent, who was elected November, 1889.

The Peabody School.—This school, located at the corner of Linnæan and Avon Streets, was opened September, 1889. The building now contains only six class-rooms, but when completed in accordance with the original plans it will have fourteen class-rooms and a hall.

Frederick S. Cutter is the master of the school, and was elected in June, 1889.

Addie F. Cleary occupies the place of master's assistant, although not elected to that position, the size of the school not yet justifying an appointment.

The Putnam School.—This school was organized in 1845. It occupied for two or three years a wooden school-house standing on the site of old Fort Putnam. This building, which was erected in 1825, was removed, and in 1847–48 a new brick school-house was built on the same spot. In 1889, this building was taken down and the present commodious one erected.

James M. Lassell was master of the school from 1845 to 1854; Francis Cogswell, from 1854 to 1874; James S. Barrell, from 1874 to 1881, when he was succeeded by Thomas W. Davis, the present master.

Sarah M. Burnham was the master's assistant from 1874 to 1879; Helen B. Furber, from 1879 to 1880. Eliza W. Huzzey, who now occupies the position, was elected in September, 1880.

Herbert H. Bates was sub-master from 1883 to 1884; Sanford B. Hubbard, from 1884 to 1886. The present sub-master, Frederick W. Eveleth, was appointed in March, 1886.

The Shepard School.—This school, first known as the North Grammar School, then as the Winthrop School, received its present name in 1852. In 1856, a brick school-house was erected for it on North Avenue near Russell Street. In 1873, this building was enlarged and remodelled.

James M. Lassell taught this school for several years previous to 1845. Lewis B. Monroe was master from 1845 to 1850; William H. Ladd, from 1850 to 1856; N. W. Metcalf was master for a few months; Moses Merrill, from 1856 to 1859; John Merrill was master for a short time; Charles W. Dinsmore, from 1859 to 1864; Malcolm W. Tewksbury, from 1864 to 1865; Daniel B. Wheeler, from 1865 to 1879. Edward O. Grover, the present master, was elected January, 1879.

Mary C. Cooke was master's assistant from 1874 to 1877; Fannie A. Cooke, from 1877 to 1880, also from 1883 to 1884; Frances V. Morse for a few months in 1884 (temporary appointment); Ellen M. Jennings, from 1881 to 1883. Nellie A. Hutchins, elected September, 1884, is the master's assistant at the present time.

The Thorndike School.—This school was formerly called the Otis School. It occupied for many years a wooden school-house on Otis Street between Fifth and Sixth Streets. In 1858 this building was burned, and the following year a brick one was erected on the same spot. In 1860, a large school-house was built at the corner of Thorndike and Sixth Streets, which in 1861 became the home of the Otis School under its new name, the Thorndike. This building, which was constructed on the old plan of large school-rooms and small class-rooms, was remodelled in 1875.

For several years previous to the re-establishment of a high school for the whole city, classical instruction was given in this school by the master, Justin A. Jacobs. Mr. Jacobs's immediate predecessor was James Parker, and his successor was Nathan K. Noble.

Mr. Noble was appointed in March, 1848, and was master of the school for nearly ten years. Joseph W. Upton succeeded him, but remained in the school only a few weeks. Ruel H. Fletcher, the present master, was appointed in December, 1857.

Ann W. Averill was master's assistant from 1874 to 1875; Ellen M. Parker, from 1875 to 1882; Lelia A. Mirick was elected September, 1882, having occupied the place for six months as one of the regular teachers. She resigned in 1889, and was succeeded by Harriet A. Townsend, the present incumbent, who was elected March, 1889.

The Washington School.—The history of this school was fully given in the report for 1885. Since that time a tablet presented to the city by

Mr. Philip Nutting has been inserted in the front wall of the building bearing this inscription: "The Washington School — Descendant of the 'faire Grammar Schoole' — First School in Cambridge." Just when the 'faire Grammar Schoole' was started is not known, but probably within a few years after the settlement of Cambridge — certainly before the year 1643.

The Washington school-house, standing at the corner of Brattle Street and Farwell Place, was dedicated June, 1852. It was remodelled in 1871, and in 1878 other important alterations were made.

Daniel Mansfield was master of the school from 1842 to 1886. John W. Freese, who was the sub-master of the school from 1883 to 1886, became master September, 1886, and still holds the position.

Hattie F. Nealley was master's assistant from 1874 to 1879; Caroline J. Dresser, from 1879 to 1883; Carrie M. Kingman, from 1886 to 1888; Annie E. Whittier, who was elected in September, 1888, is now in service. In this school no teacher was elected master's assistant while there was a sub-master, but one of the regular teachers occupied the place.

The Webster School. — The beginning of this school, under the name of the Mason School, dates from 1841. It received its present name when in March, 1853, it took possession of the brick school-house built for it on Webster Street, now Upton. This school-house was remodelled in 1873, and in 1885 it was enlarged by the addition of a wing containing four school-rooms, a master's room, and a hall.

Ambrose Wellington was the master from 1841 to 1845; Alvah C. Smith, from 1845 to 1872. John D. Billings, the present master, was appointed in September, 1872.

Gertrude E. Hale was master's assistant from 1874 to 1879; Emily H. Phinney, from 1879 to 1880; Mary C. Cooke for a few months in 1880 (temporary assistant); Lizzie C. Capen, from 1880 to 1887. Mary E. Towle was elected in June, 1887.

Charles H. Morse was sub-master from 1885 to 1889. Arthur N. Whitney, the present sub-master, was elected in September, 1889.

Primary Schools.

The Agassiz School occupies a brick building of seven rooms at the corner of Sacramento and Oxford Streets. It contains grammar and primary classes. Maria L. Baldwin is the principal; elected in 1889.

The Boardman School occupies a brick building of eight rooms on Winsor Street, near Main Street. Mary A. Lewis is the principal; elected in 1879.

The Bridge School occupies a wooden building of two rooms — a large room and a recitation room. It is located on Pioneer Street. Elizabeth E. Dallinger is the principal; elected in 1878.

The Cushing School occupies a wooden building of two rooms on Cushing Street, Belmont district. Isadore I. Foster is the principal; elected in 1881.

The Dana School occupies a wooden building of four rooms — two large rooms and two small rooms. It is located on Centre Street, Dana Hill. Maria F. Williams is the principal; elected in 1878.

The Dunster School occupies a wooden building of four rooms on Concord Avenue, near the Observatory. Susan E. Wyeth is the principal; elected in 1878.

The Felton School occupies a brick building of four rooms on Amory Street, near Broadway. Sarah J. Gunnison is the principal; elected in 1882. This building was erected in 1848 for the High School, and used by that school till 1864.

The Gannett School occupies a wooden building of four rooms on Jefferson Street, near Harding Street. Sarah J. A. Davis is the principal; elected in 1880, while the school was in the old building on Columbia Street.

The Gore School occupies a brick building of twelve rooms on Gore Street, near Third Street. Frances E. Pendexter is the principal; elected in 1878.

The Holmes School occupies a wooden building of four rooms on Hilliard Street, near Mt. Auburn Street. Marianne M. Webb is the principal; elected in 1878.

The Lassell School occupies a wooden building of four rooms on Charles Street, near Sixth Street. Nellie F. Ball is the principal; elected in 1881.

The Lowell School occupies a wooden building of four rooms on Lowell Street, near Mt. Auburn Street. Lucy E. Cyr is acting as principal, the vacancy caused by the resignation of Miss Winona Abercrombie not having been filled.

The Mason School occupies a wooden building of two rooms on Front Street, near Main Street. M. Lizzie Evans is the principal; elected in 1878.

The Otis School occupies a brick building of eight rooms on Otis Street, near Fifth Street. Ellen N. Leighton is the principal; elected in 1890.

The Quincy School occupies a brick building of two rooms on Mason

Street, near the Washington Elm. Charlotte E. Jewell is the principal; elected in 1878; transferred to the Tarbell School in 1884; transferred back to the Quincy in 1886.

The Reed School occupies a wooden building of four rooms on Reed Street, near Spruce Street. Margaret Kidd is the principal; elected in 1885.

The Riverside School occupies a wooden building of four rooms on Putnam Avenue, near Main Street. Elizabeth A. Tower is the principal; elected in 1879.

The Sargent School occupies a wooden building of four rooms at the corner of Broadway and Winsor Street. Mary A. Brown is the principal; elected in 1888.

The Stearns School occupies a wooden building of four rooms on Harvard Street, opposite Essex Street. Helen M. Ward is the principal; elected in 1878.

The Tarbell School occupies a wooden building of four rooms at the corner of Howard and Grigg Streets. Emma J. Young is the principal; elected in 1888.

The Willard School occupies a brick building of twelve rooms facing Dana Square, on Niagara Street. Amelia Wright is the principal; elected in 1880.

The Wyman School occupies a wooden building of six rooms on Spruce Street, near North Avenue. Fannie E. M. Dennis is the principal; elected in 1878.

The Kindergartens.

For eleven years Mrs. Shaw maintained in Cambridge three free kindergartens, and one other was maintained by a few Cambridge ladies. These were transferred to the care of the School Committee in September, 1889, and become a part of the public school system. In September, 1890, two more of these schools were established, and now there are six kindergartens, with three hundred pupils, taught by eleven teachers. Five of these schools are in our primary-school buildings, and are called by the names of the schools with which they are connected, viz.: the Boardman, Dunster, Gore, Lowell, and Riverside. The other school is at 76 Moore Street, and is called the Moore Street Kindergarten.

Training Schools.

In 1869, the Superintendent of Schools, Edwin B. Hale, recommended the establishment of a training school. In giving his reasons for this

recommendation, he said: "The fact is apparent that teaching can never assume its proper place until those who are to enter upon its high responsibilities will subject themselves to a thorough professional training, and will also, so long as they may teach, manifest some degree of professional zeal. With us it is felt that the great need is a school where young ladies graduated from our High School may be trained in the best method of instruction and of discipline, while at the same time they may have constant practice in the actual work of the schoolroom, under the eye of an experienced instructor, who will be competent to see their faults and faithful enough to expose them.

"This last point deserves consideration, just because experience gained in this way is so much more valuable than that acquired in the ordinary manner; for it must never be forgotten that experience does not necessarily imply skill."

In February, 1870, in accordance with this recommendation of the Superintendent, a training school was opened in the Riverside schoolhouse.

The plan of placing the classes of this school under the instruction and government of the members of the training class, supervised by the principal and assistant, was changed after a few months' trial, a permanent teacher being appointed for each class, the assistant becoming one of these teachers. This plan of organization was retained during the continuance of the school.

In October, 1875, the training class and the teachers of the school were removed to the Agassiz school-house, a new building intended for primary classes. In 1876, however, a grammar class was added to those of the primary grade. In 1882, the school was discontinued. The cost of the school per annum was about $1,200, and the average number of graduates 11. This school under the management of its accomplished principal did a good work. Many of its graduates are, or have been, among our most successful teachers, and the grammar and the primary classes connected with it were models of excellence.

After an interim of two years another training school, called the Wellington School, was established. It differs from the former in these respects: (1) In the fuller preparation required for admission; (2) in the character of the work performed; (3) in the cost of the school to the city.

The regulations relating to it are as follows :—

"The teachers of this school shall be a Master, a Master's Assistant, and as many teachers as the number of pupils shall require, who shall

constitute a training class; but the cost of the school shall not exceed the aggregate maximum salaries paid to female teachers for the instruction of the same number of pupils in the Primary and Grammar Schools.

"Graduates of the Latin School, or of the English High School, who have also graduated from one of the State Normal Schools, or from the Boston Normal School, may be candidates for the position of teacher in this school. Other persons of equal attainments may be appointed by the Committee on the Training School.

"The term of service is one year; but teachers may be excused or dismissed at any time by the Committee on the Training School.

"The Master and his assistant are responsible, under the direction of the Standing Committee, for the instruction and management of the school.

"The money compensation to the members of the training class for their services shall be two hundred dollars each for the year. Any money received by them as substitutes shall be used in the payment of their salaries.

"When the interest of the school requires it, teachers may be continued for a longer term than one year. The money received by these teachers when acting as substitutes shall be divided among them equally."

The school contains all the primary grades, and the fourth, fifth, sixth, and seventh grammar grades, the number of pupils being about five hundred.

The object in conducting a school on this plan is to give our Cambridge young women who desire to teach, and who have made special preparation for the work, an opportunity to gain experience under conditions favorable to their own success, and without prejudice to the interests of their pupils.

The rule of the Committee in regard to the qualifications of teachers for positions in our grammar and primary schools is as follows: "No person shall be eligible to the position of teacher in the Grammar or Primary Schools who has not had advantages equal to those which have been enjoyed by the teachers who have completed the required term of service in the Cambridge Training School."

This school has grown in favor from year to year. The only doubt which existed in the minds of the Committee in the beginning was whether the pupils attending it would be as well taught as those attending the other schools. It was claimed by the advocates of the plan that the inexperience of the young teachers would at least be offset by the large experience of the principal and his assistant; and it is believed by persons familiar with the work of the school that the results have vindicated the claim.

Mrs. Anna C. Sullivan was the principal of the Training School established in 1870 and discontinued in 1882, Emma F. Munroe being the assistant appointed at the opening of the school.

Herbert H. Bates was elected master of the Wellington (Training) School, September, 1884.

Agnes O. Rounds was the master's assistant from 1886 to 1888; Ella C. Whitney, from 1888 to 1889. Lelia A. Mirick was elected September, 1889, and still holds the position.

Evening Schools.

The first evening schools in Cambridge were kept during the winter of 1851–52. There were two schools — one in the First Ward, with an average attendance for twenty-four evenings of fifty-four pupils; and the other in the Third Ward. This school was kept twenty-six evenings, and the number taught was ninety. The teaching was wholly voluntary. The School Committee assumed the expense of warming the rooms, but the other expenses — for books, slates, and other materials — to the amount of $70 in one school, and about $50 in the other, were defrayed by the gentlemen by whom the schools were established.

The School Committee in their report say: "The essential question of the practicability aud usefulness of these schools having been established by the public spirit of private individuals, it is now clearly the duty of the public authorities to take the matter in hand, and to provide for their continuance under competent and salaried teachers."

Evening schools, however, were not maintained by the city till 1868, when three schools for men and boys were organized — one in each police district. The number of teachers was ten, and the number of pupils about four hundred. These schools were reopened in 1869, and three others established for women and girls. These were continued from year to year till 1879, when, with the exception of the one in Ward Three, they were closed, a lack of interest being shown by irregularity of attendance.

No evening schools were kept during the years 1881, '82, and '83; but in 1884 they were again opened, the Legislature having passed an act requiring all cities and towns of ten thousand or more inhabitants to maintain such schools. These schools have been continued from year to year, and the facts relating to them given in the annual reports. The statistics for the schools for 1889 are as follows: Number belonging to the school in Ward Three and present more than two sessions, 182; in Ward Four, 292. Average attendance in Ward Three, 65; in Ward

Four, 118. Average number of pupils to a teacher in both wards, 8.4.

In 1888–89, the evening schools, now called the elementary evening schools, were for the first time provided with suitable accommodations, the day school-rooms being used for this purpose.

In 1886, another act was passed requiring the establishment of an evening high school in cities of fifty thousand inhabitants or more, whenever fifty residents, fourteen years old or over, shall certify their desire to attend.

Under this act an evening high school was opened in the English High School building, January 3, 1889. The school was continued for fifty evenings, with an average attendance of 67, at a cost of $835. The school for 1889–90 was kept the same number of evenings at a cost of $855. The average attendance was 116; the number of teachers, 8. At the close of the school, certificates were given to pupils whose attendance and work had been satisfactory.

Evening schools have now become by law a part of the public school system, and must be maintained.

Evening Drawing Schools.

At the session of the Legislature in 1870, an act was passed requiring every city having more than ten thousand inhabitants to make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day or evening schools, under the direction of the School Committee. In compliance with this act an evening school was at once opened. Ninety persons were present the first session, and during the two months of its continuance one hundred and forty — among them carpenters, machinists, carvers, glass-cutters, stereotypers, and cabinet-makers — availed themselves of its privileges. The Committee in the annual report expressed the belief "that the school will prove one of the most useful as well as popular features of our common school system." The school was continued in 1871 upon the same plan as in 1870, but for the years 1872 and '73 it was discontinued, as suitable accommodations were not provided. In 1874 it was again opened. It was organized in two classes, the mechanical and the free-hand. Each class had two sessions a week for twenty-five weeks.

This has been the plan upon which the school has been conducted from that time to the present. The school for 1889–90 was under the supervision of the Director of Drawing for the day schools. The average attendance for the fifty sessions was: free-hand class, 53, with two assistant teachers; mechanical class, 55, with two assistant teachers.

Music.

The teaching of music was first introduced into the schools in 1845, the committee selecting the four principal grammar schools for the experiment. The report for that year says: "A teacher, Mr. Joseph Bird, was employed, according to a proposition of his own, at the rate of $50 a school per annum, on condition that the experiment should prove successful, and there should be a sufficient surplus from the appropriation for the year to justify the expenditure." In 1846, under the instruction of C. Plagge, it was extended to all the schools. December 19, 1849, Mr. Plagge resigned, and in the following January Joseph Schmidt succeeded him. He remained, it appears, but a few months, when a committee was appointed to nominate a candidate to fill the vacancy caused by his retirement. At the meeting of the Board in June, this committee "recommended the appointment of Nathan Lincoln, and that he enter upon his duties at the beginning of the fall term." Mr. Lincoln was elected, and for more than forty years was the teacher of music in the schools of Cambridge. He resigned December 31, 1890, and Frederick E. Chapman was elected his successor.

For many years the instruction was given in all the classes by the teacher of music; but, with the rapid increase in the number of schoolrooms, it was decided in 1870 that in the primary schools it should be given by the regular teachers. In 1874 the same plan was adopted for the lower classes of the grammar schools.

In 1872, Mason's National Music Charts (first series) were introduced into the primary schools, and in 1874 the second series, into the grammar schools. In 1873 pianos were bought for the seven grammar schools, the High School having been supplied with one in 1865, through the efforts of the graduating class of that year. Regular instruction in music, however, has not been given in the High School since the division of the large hall in 1872.

The following books and charts are now in use: Of Mason's National Music Course, the New First Reader, the New Second Reader, the Intermediate Reader, the Independent Reader (Cambridge edition), and the First and Second Series of Charts; also, Carey's Graded Exercises, and a variety of supplementary music.

Drawing.

The study of drawing was first introduced into the grammar and primary schools in 1869, and into the High School in 1871. In the High School a special teacher was employed, but in the grammar and primary

schools the instruction was given by the regular teachers. In 1876, a Director of Drawing was appointed whose services continued for two years. In 1878, this study was discontinued in the High School, and from 1878 to 1885 there was no supervision of the work in the grammar and primary schools. Again in 1885 a Director was appointed, and since that time, with the exception of the year 1888–89, the instruction has been under close supervision. During the past year the work has been resumed in the English High School, the Director of Drawing giving the instruction.

Mrs. Emma F. Bowler was Director of Drawing from 1876 to 1878; Augusta L. Balch from 1885 to 1888; Walter F. Brackett, the present Director, was elected September, 1889.

Sewing.

The teaching of sewing was introduced into the two lowest classes of the Allston School, September, 1877, and a teacher employed on half-time. This experiment was the result of a petition repeatedly urged upon the Committee by ladies and others in the city, who were desirous that sewing should be taught to the girls in our schools as a regular study.

The experiment in the Allston School was continued for two years. At the end of that time the Committee on Sewing judged that, for purposes of experiment, sufficient time had been allowed; and, being satisfied that the results justified an incorporation of the study into the school system, brought in a resolution to that effect. The full Board, however, declined to adopt the study, and it was discontinued. In September, 1889, the subject was again before the Committee, and in February, 1890, the work was again taken up. Until September the instruction was confined to the fourth grade, the lowest in the grammar schools. Since then the fifth grade has also received instruction. Two teachers are employed for this work.

School Libraries and the Public Library.

Early in the history of the High School efforts were made to procure a library. In 1850, the City Council made an appropriation for this purpose, which enabled the city to draw from the State treasury, under the provisions of a law then in existence, a sum equal to that appropriated by the city. Contributions of books and money were also made by persons interested in the school. Mr. Smith, the head master, gave freely from his own library. Professor Agassiz delivered a course of four lec-

tures, the proceeds of which were used for increasing the collection. From year to year the library has been enlarged, until now it contains between three and four thousand volumes.

The grammar schools are permanently supplied with books for reference, but not with books for general reading. These are obtained from the Public Library. By an arrangement made by the Trustees, a limited number of books is delivered at the schools once a week for the use of the three highest grades. This experiment has proved so successful that one or more of the other grades will undoubtedly be supplied in the same manner, and the number of books for each grade will be increased.

School Government.

The present rule of the School Board in regard to discipline, adopted more than twenty years ago, is as follows:

"It is enjoined on the teachers to exercise vigilant, prudent, and firm discipline, and to govern by persuasion and gentle measures as far as possible. No pupil shall be kept after school hours more than half an hour after each session. No pupil on entering the schools of the city shall be subject to corporal punishment in any form. But, if the pupil proves to be disorderly or refractory, such pupil, on due notice to parent or guardian from the principal of the school, and on the written consent of the Sub-Committee having charge of the school, shall be liable to corporal punishment during the remainder of the term.

"Any teacher may suspend a pupil from school for violation of the school regulations or the rules of the school, or for any other sufficient cause; but he shall immediately report the case to the parent or guardian of such pupil, and to the Sub-Committee of the school, or to the Superintendent, with a written statement of the cause of such suspension."

The following forms of letters, printed on half sheets of note paper, are used as one means of securing the co-operation of parents in the work of the schools. For convenience in referring to them, the letters are marked by *stars*. In printing them here they are *numbered*.

Letter No. 1.

.....School, ...189 .

Mr. .....

.....deportment at school is not satisfactory.

I think it best to inform you of the fact, and hope .....will do better in the future.

More definite information may be obtained of me at room No. ...

Respectfully,

.....Teacher.

To aid in maintaining good order, please sign and return this.

Place for signing. .....

Letter No. 2.

.... School, ...189 .

Mr. .....

.....deportment continues unsatisfactory.

When ..... returns I should like to have you, or some suitable person, accompany ..... . as an interview seems desirable.

Respectfully,

.....Teacher.

Room No. ....

Letter No. 3.

..... School, ...189 .

Mr. .....

.....deportment still continues unsatisfactory.

Before ..... returns it will be necessary for you, or some suitable person, to see me, or some one having charge of the school.

Respectfully,

.....Teacher.

Room No. ....

Letter No. 4.

.....School, ...189 .

Mr. .....

.....lesssons have not been prepared to my satisfaction.

I think it best to inform you of the fact, that the influence of home may be added to that of the teacher, to the end that closer attention may be given to the work of school, unless there are circumstances in the case which render it undesirable.

Respectfully,

.....Teacher.

Please sign and return this.

Place for signing. ....

Letter No. 5.

..... School, ...189 .

Mr. .....

The following in reference to the suspension of pupils is copied from the School Regulations:

"Any instructor may suspend a pupil from school for violation of the School Regulations or the rules of the school, or for any other sufficient cause; but he shall immediately report the case to the parent or guardian of such pupil, and to the Sub-Committee of the school, or to the Superintendent of Schools, with a written statement of the cause of such suspension."

In compliance with this regulation, I notify you that

.....

has been suspended from school for.....

Respectfully,

....Teacher.

This case will be reported to

..... { Sub-Committee of the School. } or.... ..... { Superintendent of Schools. }

Letter No. 6.

..... School, ...189 .

Mr. .....

Your attention is called to the following Rule of the School Committee with reference to the absence and tardiness of pupils:

"No pupil shall be admitted after the hour of commencing school without a satisfactory excuse, and all absence must be satisfactorily accounted for. Any pupil not having a satisfactory excuse, either for absence or tardiness, may be required to bring from the Sub-Committee, or Superintendent, a written permit to return to school."

You are earnestly requested to coöperate with me in efforts to secure prompt and regular attendance as far as practicable.

Respectfully,

..... .Teacher.

Please sign and return this paper.

Place for signing. .....

Letter No. 7.

Mr. .....

The following in reference to the absence and tardiness of pupils is copied from the School Regulations:

"No pupil shall be admitted after the hour of commencing school without a satisfactory excuse, and all absence must be satisfactorily accounted for. Any pupil not having a satisfactory excuse, either for absence or tardiness, may be required to bring from the Sub-Committee, or Superintendent, a written permit to return to school."

.....record is as follows:

Absent during the past..... weeks.....half days.

Tardy during the past.....weeks.....times.

Application for permission to return to school should now be made to

..... { Sub-Committee of the School. or ..... { Superintendent of Schools.

Respectfully,

.....Teacher.

If the application is granted, it will be sufficient for the one designated to write his name on the line below.

.....

.....189 .

The statute under which pupils can be dealt with who absent themselves from school and become habitual truants, or who persistently violate the reasonable rules and regulations of the schools, is as follows:—

"Each town shall make all needful provisions and arrangements concerning habitual truants and children between seven and fifteen years of age who may be found wandering about in the streets or public places therein, having no lawful occupation or business, not attending school, and growing up in ignorance, *and such children as persistently violate the rules and regulations of the common schools*, and shall make such by-laws

as shall be most conducive to the welfare of such children and to the good order of the town; and shall provide suitable places for the confinement, discipline, and instruction of such children.

"Any minor convicted under a by-law made under section ten of being an habitual truant, or of wandering about in the streets and public places of a city or town, having no lawful employment or business, not attending school, and growing up in ignorance, *or of persistently violating the rules and regulations of the common schools*, shall be committed to any institution of instruction, or suitable situation provided for the purpose, under the authority of said section or by-law, for a term not exceeding two years."

Truant Officers.

The truant officers were first elected by the School Committee in 1873. Previous to this time the duties required by the truant act of 1862 were performed by members of the police. The Committee elected five officers — Messrs. Child, Dudley, Griffin, Folsom, and Mason. In 1877, the number was reduced to three, and this number has been continued to the present time. The officers are Moses M. Child, Francis M. Mason, and John Collier. Messrs. Child and Mason have served continuously since 1873, and Mr. Collier since 1878.

Terms, Holidays, and School Hours.

Fifty years ago the following holidays and vacations were granted to the schools: Wednesday and Saturday afternoons; one week at the close of the winter term; the day of the annual state Fast; the first Monday in June, and the week preceding said Monday; the fourth of July; the week preceding Commencement and Commencement week; the annual Thanksgiving week, and Christmas day. No other vacations or holidays were allowed but by a special vote of the Board. The length of each session was three hours, and during each session there was a recess of ten minutes. From time to time changes have taken place in the length of the terms, the number of holidays, and the number of hours in each session. At the present time the regulations are as follows:—

The school year is divided into three terms :—

Autumn Term.—The time for beginning the autumn term is fixed annually at the regular meeting of the Committee in April. The autumn term ends December 23, with the morning session.

Winter Term.—The winter term begins January 2 (or the day after that celebrated as New Year's day), and ends on the Wednesday before the first Thursday in April.

Spring Term.—The spring term begins the second Monday after the first Thursday in April, and the time for closing the spring term is fixed annually at the regular meeting of the Committee in April.

Holidays.—Saturdays; Thanksgiving day, with the preceding day and the day following; Washington's birthday; Memorial day; the Seventeenth of June; and in addition to these, for the High Schools, Commencement day at Harvard College.

School Hours.—The sessions of the High Schools begin at 8.30 A. M. and close at 1.30 P. M. The High Schools have a recess of half an hour in each session.

The morning sessions of the Grammar and Primary Schools begin at 9 and close at 11.45. The afternoon sessions begin at 2 and close at 4, except during the months of November, December, and January, when they begin at 1.30 and close at 3.30. The Grammar and Primary Schools have no out-door recess.

The sessions of the Kindergartens are from 9 A. M. to 12 M.

SELECTIONS FROM FORMER REPORTS.

Plan of Study in Primary and Grammar Schools.

(1869): "Next to the moral discipline of our schools, there is no question of more importance than that of the studies pursued in them. In fact, the questions of mental and moral discipline are in great measure one. A right mental discipline is largely a good moral one. The difficulties of the latter will, many of them, disappear with a right treatment of the former. Not only will a natural method of mental training be healthful and stimulating to the intellectual faculties, but it will help to keep the temper happy and sweet. Disgust and weariness with monotonous drill are the cause of much restlessness, negligence, and mischief. A child interested in its work is not a troublesome one, and that school will least task its teacher's patience where the daily work is suited to the natural capacities and wants of its pupils.

"It should be understood that a plan of study is not intended to act as a restraint upon a teacher. It says 'thus far' only in a given direction. It merely indicates the least that should be done. Precisely the same amount of work cannot be done in every year and in every school. The capacities of classes are not uniform, and undertakings may be ventured in one school which would not be safe in another. But whatever a teacher feels that he can do, without neglect of the appointed work, to widen the range and lessen the monotony of the daily routine, he should be encouraged in doing.

"A natural scheme of education will make its basis as broad as possible. A child is by nature and necessity a lover of all knowledge. He is placed in a strange and wonderful world, and his first need is to make himself acquainted with the common objects around him. To see and learn to call by name is his first task. Classification and comparison, the study of laws and sciences, come as late in the history of the individual as in that of the race. 'Facts, with little reasoning,' should be the motto for the first half of a course of education; 'reasoning upon facts,' for its last part. Selection of special objects of study belongs, too, late in the stage of development. Not till facts are gathered from all branches of knowledge, can the mind show any natural bent or a wise selection be made.

"In the early stage of education, including the Primary and Grammar Schools, the elementary facts of all branches of knowledge ought to be taught. The only selection admissible is that of the near in preference to the remote. Things visible and immediate must first be known and named. The statement that oxygen and hydrogen combine to form water has little meaning to a child, because the elements are abstrac-

tions; but anything about the transformations of vapor, dew, frost, rain, snow, and ice, interests him, for he sees some one of them every day. Sensible objects and their pictures are the chief food of a child's mind; perception and imagination are the chief faculties to be addressed.

"Nor should the studies of one grade be regarded merely as a stepping-stone to those of another The plan for each should be made suited to the wants of each. The studies of the Grammar School should not be merely what are necessary for admission to the High School, nor those of the Primary merely the requirements for entering the Grammar School. Each should be complete as far as it goes. Education, and not the passing of examinations, is the end of school training. Any system which fails to meet the wants of each age, and keeps artificial ends in view, will not only deprive the great majority of children of the chance of gaining important knowledge, but will fail to stimulate healthy enthusiasm.

"The studies, of all the most attractive to children and the most important in training to habits of observation, are left to the High School, where, if the pupil proceed so far, it is not so much the facts of nature as their laws that he studies. For example, in the High School he is taught 'How Plants Grow,' and how to classify them, when it is wholly by accident if he knows by sight and name a single tree, shrub, or flower. He is to construct a science from facts of which he is almost or entirely ignorant, which he has perhaps not even noticed. The study will, accordingly, lack meaning and interest in proportion to his ignorance. He comes to the study of Natural Philosophy, Chemistry, and Astronomy with a mind equally untrained to observe the facts upon which these sciences are based. The panorama of earth and sky passes by the child season after season, but it gets scarcely a note of recognition at school, probably not at home, and his simple, childish wonder dies into insensibility. School and the outside world get to be regarded by him as having no connection or relation. It is only in his play that he comes in contact with Nature. His sports may do something to save him from the neglect of the school.

"This exclusion of Nature from our plan of early education can be justified on no satisfactory principle. Not surely on the ground of the difficulty of the subject. For it must not be forgotten that it is mainly facts, phenomena, with only the most general classification or explanation, that must be taught at this early stage. The so-called explanation, —which is only showing the connection between apparently isolated facts, — the study of science and its nomenclature, belong to later years. There is no greater difficulty in perceiving and naming the objects and operations of nature than a child of two years encounters, for his whole learning is little more than this. Nor can this exclusion be justified on the ground that children will learn these facts without the help of the school, for, except in the comparatively few instances in which the parent tries to supplement the work of the school, children do not learn them. They do not observe them, for no one has taught them to observe; it is just because the far greater portion of the children who

attend the Primary and Grammar Schools get no instruction at home, that it is the more incumbent on the public school to supply the deficiency. The educated will, the rich at least can, furnish their children with books at home; but children who are heirs only to poverty and ignorance must depend solely upon the bounty of the public school.

"Nor need there be serious difficulty in the method of teaching the elements of knowledge in the various departments of nature. Books written for children upon such subjects are now as common as they once were rare. But it would be wrong to place exclusive reliance upon them. 'Object teaching,' practiced according to book rules, is often a mechanical exercise in words; still more frequently the teaching is desultory and unsystematic; but the phrase is suggestive. There is no instruction that impresses like the object itself or its best representative. The best book about any subject gives the learner only second-hand knowledge. It must often be taken, because direct knowledge cannot be had; but where the object or its likeness can be seen, and the teacher is fit to guide, no book can be compared with it. It would not be difficult, for example, by means of the leaves, the bark, and, in their season, the flowers, to teach children to know the different kinds of forest and shade trees. The teacher must point out the peculiar structure of each, and show how it may be identified. They could afterwards be required to bring each a specimen, to tell where each species might be seen, and how distinguished. Then would follow lessons upon the common shrubs and flowers, the grains, the vegetables, and the different kinds of wood. Another series of lessons should be given upon birds, beasts, and insects, illustrated by charts and accompanied with reading upon their habits. Still another, and perhaps later, series would be upon the common phenomena of the air and the heavens, in which the child should be taught to watch and discover for himself as much as possible. The materials used in building, and in the mechanical arts, articles of food brought from foreign countries, and the simplest facts of physiology would furnish subjects for lessons no less instructive and interesting. With teachers, of whom we have not a few, apt to teach and apt to learn, alert to feed the minds of their pupils with food convenient for them, can there be any great difficulty in putting into practice such a scheme of instruction as this? What better foundation could there be for scientific education or for practical life? Can there be any doubt that it would delight as well as instruct, invest the school-room with something of the charm of the outer world, and furnish a connection between its daily routine and the living, moving world of realities without?

"The teacher also, hardly less than his pupils, needs the freshening influence of a wider range of topics upon which to communicate with them. His narrow book-routine is stifling. He needs constant contact with Nature and real objects to counteract its poison, and to bring him into closer sympathy with the minds of his pupils."

The Teacher and His Work.

(1840): "It is not felt how arduous the task of a faithful teacher is. Not only must he have knowledge, but an aptness to teach, or to impart that knowledge. Teaching is an art, and as such requires constant study. No more can one dispense with labor in perfecting himself for this service, than the artist can chisel or paint without toil, or the carpenter, who has never served a full apprenticeship, build a good house. A teacher who does not observe and profit by his experience is likely, the longer he is in school, the more negligent and incompetent to become.

"Especially should a teacher cultivate his moral nature. In this connection we cannot but advert to the topic of manners. It has often been said that manners are morals. We cannot but feel the truth of this remark in relation to our schools. It is not a matter of secondary importance that a teacher should cultivate mildness, gentleness, pleasant tones, and kind looks in the school room. We regard it of vital moment, so much so, that we should deem it our duty to remove a teacher for deficiency in this respect, however he or she might excel in the art of teaching. Order must be secured in a school-room; but we may not resort to rudeness, violence, ungentlemanly or unladylike *means* to enforce order. This is to sacrifice a prime virtue to convenience. Let the teacher make no gestures, adopt no tones, use no language, which he would not propagate among his scholars. If he have that influence which his office requires of him, he cannot but be daily forming the manners of his scholars by his own. All that is prescribed by lessons upon courtesy will be worse than lost, if the teacher be not himself a model of good manners.

"A want of conscientiousness is a capital defect in one charged with the care of the young. He who will neglect his school whenever the eye of the Committee is not upon him, or when he can conceal his criminality from the parents of his scholars, is, of all persons, the last who should be entrusted with a school. No amount of learning, no skill in instruction, should induce a Committee to employ one who, keeping no good conscience himself, cannot but shed a moral blight on the minds and hearts of the children in his care."

(1843): "A good teacher combines in himself an assemblage of qualities not often found in the same individual. A familiar knowledge of all the required studies, aptness to teach, tact in management, decision mingled with gentleness and suavity, impartial justice, elevated moral sentiments, self-control, patience, energy, pleasure in the employment, a kind and cheerful disposition, and an ability to infuse into the youthful mind an enthusiastic desire of progress in knowledge and goodness."

(1856): "Education is by no means finished at school, and those especially who adopt the teacher's profession must constantly devote a portion of their leisure to reading and study, or they will soon find them-

selves falling behind the times. The Committee place the more stress upon this point, because they fear its importance is sometimes lost sight of by those who have been long in the business, and with whom teaching is in danger of degenerating into a mere mechanical routine. The instructor who, while out of school, reads nothing but the newspapers and the Bible, and pays perhaps more attention to the former than the latter, must expect that his faculties will gradually become rusty and his range of ideas narrowed, and that his pupils will sometimes put questions to him that he will be unable to answer."

(1859): "The most trying and depressing feature of a teacher's life is the necessity of constantly repeating his round of toil. He is perpetually in fear that he will not escape the rust and moss that collect in the path of routine. The slow wear of monotony tends to blunt the edge of the keenest faculties; whereas, whatever gives the mind now and then a good airing will bring it into fresher sympathy with the minds it has to act upon. Live and lively teaching is the best teaching. The art to inspire is the chief talent in the case. And very little trouble of mind or strain of toil is needed. The tone and play of mind are the main thing. A nature kept always clear and fresh will do wonders with the humblest machinery. Everything that comes to hand is transfigured by the energy of intelligence into an instrument of knowledge.

"A common wood-cut, a simple landscape, a fire-side story, a dying leaf, a starting bud, the feather of a bird, the fall of a snow-flake, all wayside facts, all changes in the world of nature, are riches in the inventory of a quick-minded and clear-eyed instructor. We believe that a habit of cultivating these little but constantly recurring means of life will make the vacation itself not only more productive, but vastly less burdensome and more invigorating."

(1860): "We would sum up in a few words to our teachers the suggestions that spring out of our intense consciousness of their opportunities and responsibilities.

"We consider your vocation second to none other upon earth. A school teacher, who is faithfully working up to an ideal commensurate with the possibilities of the immortal beings he labors with, has none that enjoy greater scope for loftiest influence, and should be held, therefore, in loftiest honor. See to it, then, that the grooved and channelled routine of your labors does not narrow you down to a cold, perfunctory performance of them. See to it that you maintain your faculties on the alert, steadily picking up what fresh information you can from books or otherwise, and keeping abreast of the age, so that you can draw increasing supplies from your intellectual stores, to illustrate the studies of your classes and ply them with suggestive stimuli. Remember well that text-books are not inclosures within which the minds of your scholars are to be penned, but guide-boards to point out what manifold reaches of road are before them for their assiduous travel; and that, in another's phrase, 'a child should be taught two things every day — both to know his book and to forget it.' Maintain a diligent

watch over your manners, so that your refined and chastened demeanor shall be a constant lesson, forceful though silent, in the proprieties of decorous behaviour; over your speech, so that its purity and correctness shall illustrate the eloquence of a true usage of our mother tongue; over your temper, so that your discipline shall owe more to the moral power of your self-possessed manhood and womanhood than to the terrors of your frown or your rod. And, above all, seek fervently from the right Source to be so inspired with the supreme and eternal realities of existence that your whole being shall gravitate ceaselessly towards the noblest issues of life. Then your unconscious tuition, exemplifying the true relations of culture and subordinating intellect to soul, shall hallow your conscious labors, and your scholars be persuaded to purify for eternity what is first to be devoted to mankind."

(1872): "Much is now required of a teacher of a primary school. She should be able to control easily, winning obedience rather than enforcing it; she should understand the laws both of the physical and mental growth of the child, that she may do no violence to the one or the other. She should be able to make the school-room attractive, that the pupil may not, as often happens, acquire a dislike for school which years cannot remove. Let the teacher, so far as possible, study the special nature of each child, that she may adapt her methods to his peculiar wants. Let the teacher strive to create in the child a love for learning; for the work of education consists chiefly, in giving a thirst for knowledge, and in teaching the means of gratifying it."

Reading.

(1842): "The Committee would call the attention of the town to the subject of establishing School Libraries, for the benefit of the older scholars. The Legislature has made the liberal offer of paying fifteen dollars to each school district which will raise the same sum for the purchase of a library. We earnestly hope the town of Cambridge will not neglect this favorable opportunity of procuring good books for their children's use. Such works as Sparks's Lives of Washington and Franklin, not to name other books in the wide range of reading embraced in the libraries already published for this object, including History, Biography, Polite Literature, Natural History, etc., should be placed within the reach of the young in our schools. They would prove an invaluable substitute for those juvenile romances and those cheap newspaper novels which are now constantly doing mischief among our children."

(1850): "The Committee hope that the reading and pronunciation of the English language will receive increased attention in all the lower schools, and the masters of the Grammar Schools will thus find time for more exercises in the critical examination of entire works, or portions of works of those authors who belong to the classical literature of our language; for instance, parts of Spenser's Fairy Queen, the Paradise Lost, a play of Shakspeare, the poems of Pope, Goldsmith, Bryant, and Long-

fellow; a good translation of the Iliad, or, in prose, an oration of Demosthenes or Cicero translated, a discourse of Burke, Webster, or Everett. In other words the suggestion is to introduce among the English scholars of our Grammar and High Schools a thorough study of our language and some of the best authors that have adorned it, in a method corresponding to that which is followed in the study of the classical languages at school and in college."

(1875): "The training should be, as far as possible, directly useful, and ornamental only so far as this characteristic belongs to whatever is truly useful. Thus, when we consider the large proportion of children who have no access to books at home, the great aim should be to enable them to read fluently and intelligently, without reference to those finer graces of accent and modulation which can be cultivated only by dwelling upon the same piece until what is called reading becomes mere recitation. The desired end would be best attained by having a much larger amount read in schools than is read now, and that of matter which will interest the pupils and give them a taste for reading."

(1877): "The power to read is often taught in our schools without a corresponding instruction in the choice of reading. Our text-books are very apt to draw on third and fourth rate authors for their material, and a fleeting fashion becomes impressed on the child's mind, in place of the permanent in literature. The efforts made to direct the children in their choice of books outside of school hours is a step in the right direction, and it would be well if some plan could be devised by which the first class in our Grammar Schools could be introduced to the best literature, not necessarily in the way of analytical study, but of familiarity of intercourse. It cannot be too often urged that, while the High School is theoretically the apex of the city public school system, the vast majority of boys and girls end their school life with the Grammar School, and their interests ought not to be sacrificed to those of the few who pass beyond into the High School. So far as possible, studies should be adapted in such a way that the grammar school may contain the elements of a finishing school, and not exclusively of a preparatory."

(1877): "The home influence of many children is unfavorable to the formation of good habits in reading. The schools should seek not only to counteract this influence, but to exert a positive influence in the opposite direction. The reading of instructive books should become a part of the regular course of study, and receive the same thoughtful attention from the teacher which is now given to other studies."

(1878): "We cannot over-estimate the power of genius in literature to make itself durably felt in the responsive mind; and the work of our common schools will never be the highest so long as the power of reading is taught, and not the choice of reading. The great end of the public schools is not to give children merely the capacity to read the daily newspaper and to cast accounts; in the character of the good citi-

zen an essential element is the love of what is honest and pure in his country's literature, and the training of the public schools ought to look to this end."

The report of the Superintendent for 1878 was almost wholly given to the subject of reading. The closing lines were as follows: "If I have occupied considerable space in my reports from year to year upon the subject of reading, and have strongly urged the adoption of measures to secure an abundant supply of suitable reading matter, it is because I believe our schools should not only teach a child to read, but aim to awaken in his mind a healthy desire for reading, and fit him to recognize and appreciate the best, rejecting all else. 'No thoroughness of instruction can atone for a failure to develop a correct literary taste in our pupils. The school is soon left behind, and in the busy pursuits of life its lessons are forgotten; but a fondness for reading once acquired remains a permanent and priceless possession.'"

(1884): "The Public Library has its field of usefulness; but it is not an unmixed blessing unless people are taught to use it aright. Our teachers are doing much towards directing the reading of their pupils, and the Librarian of our Public Library is always ready to aid those who seek her assistance in the selection of books.

It is not enough, however, to put even a good book into a child's hand. He should be taught how to read it, and nowhere, except in the home circle, can this be so well done as in the schools."

Language.

(1851): "The study of our own language is one of the most interesting in the whole range of discipline. Apart from the general consideration of language, as the miraculous instrument whereby we express and communicate our thoughts — those unanswerable evidences of our spiritual and immortal nature — our own language embodies in itself the internal and external history of the Teutonic race to which we belong; nay, when followed out to the last analysis, it conducts us back to the primitive seats of mankind in the sacred soil of Asia. These refined and remote analogies, leading to surprising results no less certainly than the processes of physical and mathematical science, lie perhaps beyond the reach of pupils in our public schools; and yet a general outline of them may doubtless be presented in an intelligible form, and in such a manner as to arrest the attention of scholars and arouse their interest; for there is always an intellectual delight of a high order in apprehending a general truth.

"But to leave the grand generalizations into which the affiliation of language points the way, there is a narrower view, and perhaps more practical, to be taken of the study of the English. Our language was formed, not only at the confluence of many streams of speech flowing in from the East, but in a country over which innumerable waves of migration and conquest flowed during a long series of ages, each leaving deposited

there a layer of words and grammatical forms, which have exercised an influence upon the final structure and character of the language. The traces of all these lie embedded in the substance of the existing language, and tell as plainly the past history of those who spoke it as the fossil remains unfold the primeval epochs in the geological history of our globe; and the peculiar forms of expression which have gradually been wrought into its variegated texture, the changes in the signification of words, the modification in the structure of sentences, the pregnant popular idioms growing from usages once existing but gradually becoming extinct, while the idioms remain a vital part of the language, the introduction of new words for new ideas, and new phrases for new results of experience or speculation,—all these record the history of those to whom the English language has been from early times the most precious heirloom. To understand the language justly, it should be studied from this point of view; but the mere knowledge of the language is only one of the many advantages to be secured by this method. The pupil, having once mastered the form and general principles of English Grammar, may soon be placed in a position to comprehend these historical points; for there is nothing in them too abstruse or remote for the mind of a well-trained scholar in the higher classes of our public schools to apprehend, with proper instructions from the teacher. But our school Grammars are not prepared according to these views; some of them are evidently written by men whose knowledge of English is bounded by the correct usage of the day; others reject any further authority altogether. And this is the reason why some of these writers condemn the old and expressive idioms of the language, and admit the awkward substitutes by which speakers and writers, wiser in their own conceit than their fathers were, have endeavored to supply their place. The logic of language is sometimes more refined and subtle than the logic of Grammar; the former is the logic of thought and imagination, the latter is only the logic of forms. Language written rigidly according to the formal preciseness of this class of grammarians, is no more like the living language of acting, thinking, feeling, and speaking men, than a French garden, with formal alleys and trimmed yews, and box-wood cut into peacocks and quadrupeds, is like a natural landscape or a primeval forest. The English language, so written, is not the mother tongue of Shakespeare and Milton, of Chatham and Burke, of Webster and Everett, of Bryant and Longfellow."

Geography and History.

(1851): "Physical Geography is the natural basis for history. The globe is the stage, on which the successive acts in the drama of human society have been performed or are performing. The great physical features of the earth have the most intimate relations with the fortunes of the human family; and he who would truly comprehend the course of history in the migrations of the races of man must begin by acquiring a correct idea of the natural highways over which these migrations took up their lines of march. The scenes of history illustrate and

explain the events; and the events explain the arrangements of the scenes. The true and most profitable mode of studying history, then, is to study first its leading outlines, as soon as the elements of physical geography have been accurately acquired, and to connect the two in the scholar's mind, as they are connected in nature and the plans of Providence. This method gives the learner, first a deep interest in his study, because he sees the relations and dependencies of the parts; second, it furnishes him a general scheme, a frame-work, in which all his subsequent reading readily arranges itself in its proper place. The common method of selecting some particular portion of history, as for example the history of the European settlements on the American continent, is not without its use, for all knowledge is useful; but it falls short of the highest use of knowledge, because it does not connect itself with what goes before, and does not form a part of a general view. To learn history so is a mere act of the memory, and furnishes but little discipline to the mind beyond the exercise of this particular faculty. It may be said that a few fragments of history are all that the time assigned to that study will allow the scholar to acquire. But a moment's reflection, or if not that, a brief experience would show that the time now employed in learning by memory the disconnected facts of some isolated epoch would be sufficient to acquire such a general outline of universal history as would serve for a basis of all special studies afterwards; for the powers of acquisition are wonderfully multiplied by bringing the aid of general views to help the memory, or rather by making the memory a philosophical instead of a mechanical one."

Moral Training.

(1861): "It is in vain to expect much from the school, when the home training has been neglected. It is true only in a narrow and technical sense that the teacher is in the place of the parent. For all that makes character, as well as for all the amenities of manners, the home is the school ordained of God, and the parent can delegate his trust to no other. When this has been neglected, the school may indeed offer some check to the development of bad tendencies, but it will not be a permanent one. There is no natural affection to enforce the appeal, no sacred charm, such as invests the thought of home, to stimulate to strong endeavor. Where centres a child's love, is the best atmosphere for the tender growth of the moral sentiments. From the lips that God has made seem almost infallible to the child's apprehension, will best come the precepts that are to guide his life. In all that respects moral and religious culture, therefore, the school must be secondary and auxiliary to the home; and how easy and delightful the teacher's task, where respect and trust have become habitual, obedience a second nature, and all the home-bred virtues of well-trained childhood, shining in the features and manners, give surest evidence of parental care and wisdom. The child who has been thus carefully nurtured at home is an acquisition to any school, for, unconsciously, he is the teacher's best ally. It is example confirming precept.

"But has the school, has the teacher no responsibility for the *moral culture* of his pupils? Are his duties exhausted with text-book instruction? I think that, while he will consider it the chief *object* of the school to give instruction in the various branches of study, he ought also to remember that moral and religious culture are the higher parts of education, and that, though the home is their appropriate school, it is his duty to aid the home training in these respects with all the means in his power. What appliances can he use? In the first place, the intellectual discipline is in itself an aid to moral culture; for the moral and intellectual parts of our nature are so intimately connected, thoughts and sentiments are so combined, that the growth of one must affect the other. Besides, there are often opportunities furnished by the lessons of the day to suggest a useful moral; as the character and conduct of some person in history, a passage in an author studied, or a single word charged with moral meaning. A class will listen much more readily to familiar talk excited in such a way, than to any formal discourse. But the latter may be well employed on suitable occasions, as when some serious misdemeanor has been brought to the notice of the whole school, or when some important rule has to be enforced, or when some unusual event breaks the ordinary course of school life. The teacher can easily pass from the particular occasion which has excited remark to a wider application.

"But by far the most powerful means which a teacher, or any one else who wishes to influence others, can use, is example. Without it precept is powerless. The teacher must himself be what he urges upon his pupil. How unfortunate for him and his charge, if his careless conduct, or hasty speech, or prejudice, or lack of sympathy with youthful feeling, turn the edge of all his counsels and make them of no effect.

"The theory of our public schools does not include much in the way of direct religious instruction. But some influence they must have, either religious or the reverse. Not merely on the ground of justice to the parents, but also on moral grounds connected with the child's character, I believe that the faith of a child in the religious ideas in which he has been educated should never be weakened or suspicion thrown upon them. However useful free inquiry, self-prompted and honest, may be to him when he comes to maturity, in childhood, at least, any loosening of religious opinions by others would be in the highest degree dangerous; for the morality of a child is so directly built on his religious belief, that any shock given to the one would surely injure the other. Hence I think the religious bias given at home should not be interfered with at school or anywhere else. But the religious *spirit* developed at home may certainly be fostered at school. The first, best lessons of religion, reverence and love, may be impressed upon the heart; not so much by direct instruction — for that which appeals to the sentiments can never be a proper object of instruction — as by general influences, tending to awaken whatever there may be of natural susceptibility to such impressions. As plants depend for half their life on unseen elements in the air, so in the moral atmosphere invisible and subtle agencies are ever at

work to elevate or debase. Here are needed the sharpest observation and the finest analysis. He who can command the elements of this atmosphere, though he seem not to utter a word, will most successfully teach the great lessons of religion and all the finer graces of a virtuous character."

Social and Moral Influence.

(1840): "We believe that the social effect of our public schools is much in their favor. Here are seen, seated side by side, the children of the rich and the poor, the honored and the obscure. It is here merit alone which receives commendation. The good scholar is the only object of favor. Let him come from the parlor, he is not noticed and favored for that circumstance alone; nor is he looked down upon because his home is humble. Can such schools fail to equalize the feelings of our children? Are they not truly republican institutions?

"Nor is the moral influence of the public schools less important than the social. They tend to foster mutual kindness and respect between the children of our common Father. They recognize that great principle on which Providence proceeds, the bringing of all, good and evil, into daily contact, the good being thus called to elevate their moral inferiors, and the evil being aided to reform by the example and advice of the good."

Co-education of the Sexes.

(1851): "The people of Cambridge look upon the High School with favor and laudable pride; and it is often referred to by citizens of other towns as a model worthy of imitation. Distinguished foreigners, visiting the United States to make themselves acquainted with our system of public education, have examined with interest and approbation the details of our High School system, and have watched its operations with care. It binds together the parts of the complicated system of our public schools, which has been matured by the experience, forethought, personal labors, and anxious cares of committees and teachers through a series of years; and it is intended to finish the work, begun in the local schools of different grades, by furnishing a higher education to all the youth of both sexes who have qualified themselves to pass the examinations and are desirous to enter upon its studies. This is one of its peculiarities. It is founded on the idea that girls are equally entitled with boys to the benefits of literary and even scientific culture. The object that we have aimed to accomplish is to train up both sexes equally. We have not noticed, in our observation and experience of life, that the Creator has less bountifully endowed one-half of his rational children than he has the other. Their character, tendencies, tastes, affections are different; but both are alike intellectual and moral; both alike require the development of their faculties; both alike are permitted to enjoy the pleasures of literary culture, and to comprehend the greatest truths of science; both alike, in after life, have constant occasions to use all the knowledge they possess, and to task all the strength of the

reasoning faculties they have received from nature or acquired by education — each in their appropriate sphere — and both are alike exposed to the evils of ignorance and the impostures of knavery. They are destined to pass through life together; having the same interests, with common sources of happiness, common duties, common hopes, both for this world and the next. It is the plainest dictate of good sense that they should be educated alike, so far as education is a general preparation for specific duties, in the various careers of life. Observation in the schools has constantly shown, that whether in literature or science, whether in language or mathematics, the girls are fully equal in capacity to the boys; and, if the reports of our committees are to be trusted, they are in many things their superiors. We may flatter ourselves that this is owing to the earlier growth and maturity of the female mind. If so, it is another reason why their minds, during the rapidly-forming period of youth, should have the full benefit of the best education we can give them. It has further been found advantageous to both sexes to be educated together. There is a natural and most beneficial influence mutually exercised, like that between brothers and sisters in the family circle. They learn to appreciate and respect each other, and the tone of manners on both sides is made purer and more refined by this beneficial intercourse. Candor, however, must admit that the chief benefit is received by the boys; their ruder natures more need the softening and refining process than the gentle and delicate natures of girls. 'A boy,' says a German writer, 'is a little barbarian, out of whom a man is to be formed.' This was written in a country where the sexes are wholly separated during the period of their education. The expression is strong, but it has a basis of truth; and there is nothing so well suited to cure a boy of his native barbarism as the influence of the other sex, exerted not only by their daily presence, but by their sharing in the same intellectual pursuits.

"The experience of our public schools has settled the question, so far as the youth of this city are concerned, as to the desirableness of bringing the sexes together within the sphere of each other's natural influence, in all the stages of our public education. This association and equality in studies is one of the characteristics that have struck foreigners most strangely; a common objection to it has been that it must unfit the girls for the domestic duties in which their lives are to be spent. But there is a general principle to be laid down in education; that the best educated man will best discharge every duty; and it is absurd not to extend a law of human life to the better half of the human family; the completion of the rule is, the best educated woman will best discharge every duty that may devolve upon her in domestic life. A woman will govern her household none the worse for knowing history, mathematics, languages well. She will preside over the social circle none the less gracefully for being able to take an intelligent share in literary, scientific, or generally intellectual conversation. She will direct her cook how to roast, or boil, or bake; how to combine the elements of a pudding, or blend into mysterious harmony the multiform ingredients of a

pie, none the less skillfully for knowing how to work a problem in Euclid or scan a line in Virgil. This is not a conclusion of theory, but a fact of experience. The citizens of Cambridge, therefore, have wisely resolved that their daughters shall be educated as well as their sons; and their daughters, with equal wisdom, have resolved to turn the opportunity to the best account."

Miscellaneous Selections.

"Next to moral excellence, good reading is the finest ornament which can grace a school. It is at the very foundation of intellectual acquirements and accomplishments."

"It is a matter of very little significance whether a child can outshine the rest in reading this or that ballad; but it is a matter of great importance what he can do with the column of a newspaper or a book or a letter from a friend."

"A child will love to read, if he can have books in his own language. He loves knowledge, but it must be in pictures, not in abstractions; in forms which live and move before his mind's eye, and not in dead words."

"The readiest means of improving the schools is found in selecting good teachers; and no surer way of injuring them has been discovered than by placing the children in the hands of those who lack the important qualifications of a wise and judicious instructor."

"With due allowance for the material he works on, the school is made by the teacher. It bears his stamp and seal. The Committee may scheme and plan, but the schoolmaster alone can make what is really of any value in their schemes and plans take root."

"The 'text-book' and the 'course' should neither be imposed nor followed with an iron rigidity. The teacher should have resources of his own."

"Many of our teachers, who have a natural aptness for their work, make the school-room a very paradise for the little folks entrusted to their care. Habits of order and neatness are inculcated, politeness of manners encouraged, and their morals are carefully looked after."

"All persons are not equally qualified for all duties,—a man may be a good man, but a poor teacher. Better that a single individual should suffer temporary disappointment in the failure of cherished hopes, than that a whole school should lose those golden days which are properly devoted to improvement and to laying the foundations of usefulness and happiness, and which, once lost, can never be recalled."

"It is the bounden duty of the School Committee to choose the best possible teacher; and they are guilty of a dereliction of duty if they

appoint one of inferior merit, solely on the ground that he or she has held the office, though probably unworthy of it, during the previous year. Nothing would be so injurious to the schools as the right of any feeble or indolent teacher to cling to his position like a barnacle to a ship's hull, because he unluckily once found a place there, though he has never been anything but an impediment to the ship's motion."

"The Committee, being a part of the tax-paying community, have the same motives for an economical expenditure of money as their neighbors; and with them, also, they have only a common interest in providing suitable accommodations for the children, and procuring teachers sufficiently competent in learning, and skilful in imparting instruction, to take charge of the schools."

"The teacher who drills his class merely for the ordeal of the approaching examination is drilling them into routine and out of real study. He should conduct all his lessons with reference to life and its work and needs, and aim at a broad mastery of the matter in hand."

"A mile of walking on a piazza is not worth as much as a mile in the fields. The teacher who wishes to be thorough must not drill always, or he will destroy the life and the enthusiasm which is alone equal to the high labors of thorough study."

"There must be system, and there must be order; a school that is lacking in either of these is a failure at the start. But let the essence of the system centre, not in monotonous sameness, but in ever fresh variety; and let order be secured, not through the forced, sit-still method, but through the self-forgetful attention which genial and interesting processes of instruction will produce."

"The vice which is most difficult to be eradicated from our systems of school instruction is the tendency to a mechanical repetition of words, from which the soul of any meaning is departed; and this fault is often most injurious when both teacher and pupil flatter themselves that the lesson has been most faithfully studied. It can be avoided only by teaching from a full and ready mind, which constantly enlightens and diversifies the main subject of study from its own stores of illustrative and explanatory matter. It is here that a wide range of even discursive reading produces its appropriate and valuable results. It affords the means of rendering almost every school exercise in grammar, geography, and reading more instructive and entertaining."

"It may be worth while now and then to get a spark by cutting off the regular flow of the current. A quick, piercing, unexpected question will sometimes startle a boy into thinking, who would otherwise comfortably drowse over a lesson which he had (as he supposed) sufficiently learned, and had filed away in a dark pigeon-hole of his memory."

"In no respect is the difference between a child's mind and that of an adult more striking, than the contrast between a child's love of

change and variety, and the power of concentration in the adult. It is a long way from one to the other, and the end must be reached by slow and gentle gradations. It will not do to begin with a monotonous, unvarying routine, if you wish to stimulate to mental activity. Such a system will make dullards instead of bright, quick minds. This roving habit of mind in the child is not pernicious at that age. It is nature's way to get acquainted with the world in which it is placed, by exciting its wonder and curiosity at every step. In every plan for educating children, should we not, therefore, begin as nature begins, by allowing greater scope to this natural love of variety, detaining the mind only long enough on each object to fix some new idea?"

"There is no inevitable charm even in Colburn's First Lessons, with all its excellences, to rouse and stimulate the thinking faculty. It is possible to get up a boy or girl for examination in that as in any other book. A recitation in that, as in anything else, may, by careful training, be made as interesting as a concert of caged parrots. Mental arithmetic may be forced to run in grooves. It may turn into a levelling machine which shall destroy individual spring and life. A quick-witted boy, who can jump the ditch, may be made to walk round the end of it. Nothing is more delightful than to watch the light of intelligence darting into the eye of a boy whose mind is too quick for his own analysis. Nothing is more tedious than the monotonous tramp which compels such a boy to walk in file with the dullest scholar in the class. We are not denying the value of precise ideas or of precise language. But we do deny the value of prescribed and borrowed forms of speech, which to the child who mumbles them over explain nothing."

"In providing schools for very young and very poor children, it will have to be borne in mind, that what we commonly regard as the objects of school education are of very much less importance than the giving to the children such habits, tastes, and ideas as will strengthen them against the temptations to which they are exposed, and form their characters for further progress."

"Since the primary school is the threshold of our public-school system, and since here is laid the foundation of the child's education, the entrance should be made pleasing and attractive to him. His first notion of books and study should be made agreeable. His better nature should be reached and quickened. Correct methods and habits should be taught him, and a mental appetite aroused that would urge him on through life in search of knowledge and truth. Correct habits of observation and sense of propriety and becoming conduct, with proper notions of right and wrong, as well as of the civility due his associates, can and should be taught every child in our public schools. The work well done in lower grades makes the work in the higher attractive, and easy to both pupils and teachers."

"A system of public education is truly republican just in proportion as it brings the means of securing the best possible education within the

reach of all who are qualified to benefit by it. It is the general culture of the mind which brings to light intellectual aptitudes. Without this, the attempt to mark out the future careers of our children is no better than arbitrary decision or vague guess-work. God has written upon the mind of every one of his children his own will; he has traced with the creative finger of omnipotence the lines and proportions of the intellectual constitution; general education is the fire which brings out and makes legible these invisible signatures of the Almighty."

"The State educates children and youth, not for their own sake, but for its own sake; and it has no collective interest or need of more intense importance than the advanced culture of an ever larger proportion of those who shall be citizens."

" The requirements of health are as imperative as those of intellectual culture, and both have intimate relations."

"The knowledge of the world's history from Adam down would be no compensation to a parent for a thoroughly diseased son ; the whole geography of creation by heart would not soothe a needlessly bereaved mother over her daughter's grave."

" Were teachers and parents aware of the paramount importance of a healthy *physique*, the same amount of study and even more might be secured without the present sacrifice. Better ventilation would be provided at home as well as abroad, by night as well as by day. Vacations, holidays, leisure hours, would see the girl as well as the boy giving her body a chance to catch up with her mind,—her chest an expansion correspondent to that of her brain,—her lungs as much freedom of range as her imagination or her sensibility."

" No mistake is greater than that of supposing that most things are first understood by their definitions. Many definitions are utterly dark, till after the thing defined is otherwise familiarly known. They follow knowledge quite as often as they lead to it."

" A teacher who can speak to the eye as well as to the ear works with a compound lever. With young children, seeing is believing. When the ear is dull or jaded, the eye is wide awake. In Physical Geography, in particular, the foundation of which, as a study, should be laid quite early, the crayon is of incalculable value. The visible illustration makes the oral description really lively and definite."

" The scholar who stays unnecessarily from school, not only loses the lessons of the day, but disqualifies himself for successful application the next day. But the evil of irregularity is still greater upon the school than upon the scholar who is the subject of it."

" The individual scholar is not only retarded and discouraged by his absences, and disgusted with school by the consciousness of having fallen behind his class, but the teachers are disheartened, and all the

pupils of the same grade are checked in their progress and put back to accommodate loiterers, till the fire of enthusiasm for improvement is sometimes wholly quenched."

"Our wealth is in the mines of intellect that lie hidden in the popular body, and not in the gold, silver, and iron, even though the national domain stretch over vast continents that rest on golden foundations."

"The hope of the future, with reference to the great evils that now exist in the community and in the country, is in the training of the young to right principles of action. It has been truly said, 'A man can make a fortune in a day; but a great moral purpose is a thing of time. It must begin in the boy or the girl.'"

"We need in our country to-day men and women of integrity rather than of high intellectual attainments. Let it not then be forgotten that in our schools moral training has its place as well as intellectual training."

"It is not always enough considered how much the mind is formed by what the eye habitually feeds upon. Refined mental and even moral tastes come through conversance with the beautiful in nature and art. Dull and commonplace scenes will be likely to make dull and commonplace minds. Mere brick and mortar, iron and wood, dusty streets and an unlovely neighborhood, will leave unsatisfied and undeveloped some of the finer faculties of our nature. But a pleasing prospect, the neighborhood of grand old trees, and the music of the summer birds 'that sing among the branches,' how they soften and subdue the rude and coarse in us, even unawares, steal from us our selfishness, and perpetually invite us to the highest thoughts!"

"In judging of the conduct and character of scholars, we must always look upon them with leniency, remembering that the highest and best of human beings are full of faults and imperfections, and that it would be visionary to expect of children that uniform excellence which none of their elders succeed in attaining. We must remember, too, that they are still in the weakness of their reason, while their passions are strong; that few of them are under the wisest guidance at home; that parents seldom come up to the standard of perfect duty, in training their children in the way they should go, while many set before them bad examples of unprincipled conduct, profane conversation, and brutal manners. Some children come to school from homes where the influences are good; others, where they are indifferent; others, where they are almost wholly evil. All these considerations ought to temper the severity of our judgment, whenever the unpromising conduct of boys and girls at school tempts us to despair of final success. These considerations should also increase our sympathy for the teachers, who have all these obstacles to contend against, and heighten our appreciation of the value of their services, when their labors are crowned by the moral and intellectual growth of their pupils."

"The Committee beg leave to urge upon all good citizens the importance, which most of them already deeply feel, of generously sustaining the schools; to the selfish, as well as to the philanthropic, we say sustain the schools; public order, freedom, thrift, the security of property, and the comforts of a civilized and Christian community depend upon them. To the benevolent, we say sustain the schools. You cannot confer a greater benefit upon the masses around you than by securing to them a just and thorough education. To the patriotic, we say sustain the schools. It is for you to decide to what sort of population, ignorant or instructed, immoral or virtuous, you will intrust the destinies of this ancient town and your country."

"But of paramount importance is the interest taken by parents in our Public Schools. In the decision of every question, touching the prosperity of these institutions, the parent gives the casting vote. It is the father, who by his voice grants or withholds the appropriations needed for the liberal support of our schools. It is the mother, who must influence her sons and daughters to a prompt and punctual attendance on school, that attendance without which money, were it raised by tens of thousands, is granted in vain, and the Committee toil to no purpose, and the teacher talks to an empty school-room. It is the parents, who, by conversing with their children on their studies, and by manifesting an interest in their mental and moral improvement at school, can alone make it sure that they will come out good scholars, and, what is far better, in the end make good men and women."

(1851): "We must not rest contented with what we have already accomplished, however encouraging that may be. The most important of all our tasks is to train up the generation which shall succeed us. They will have to settle the most transcendent questions that have ever been submitted to human decision—questions that will require all the ability of the ablest, all the wisdom of the wisest, all the goodness of the best. We cannot afford to throw away or pervert or neglect a particle of the talents distributed among the people. The strongest considerations of economy urge us to carry out the principles of public education in the most comprehensive spirit; the most keen-sighted forecast bids us to labor to the utmost, and to consecrate our time, and expend our means, so that, if possible, not one of the coming generation, before whom the great issues now rapidly joining will present themselves for final adjustment, shall remain unprepared to meet intelligently whatever of responsibility shall devolve upon him. Every good citizen, whether in office or in a private station, must acknowledge the weight of duty that rests upon him, and see to it that his obligations, in this vital concern, be fully performed. And while each and all do their best in their several spheres, each and all should harmonize their efforts by referring them to general results and the all-embracing interests of the country and the age."

FRANCIS COGSWELL,
Superintendent of Public Schools.

In School Committee, Feb. 19, 1891.

Voted, That the report prepared and read by the Superintendent be adopted as the Annual Report of the School Committee for 1890, and that the Secretary be authorized to append the names of the members of the Committee thereto.

SANFORD B. HUBBARD,
Secretary.

Members of the School Committee for 1890.

HENRY H. GILMORE, *Chairman ex officio.*

*JOHN L. HILDRETH,	EDMUND WALSH,
†WINFIELD S. CHAPLIN,	ANNE CLARK STEWART,
EDWARD H. HALL,	ASA P. MORSE,
ALICE M. LONGFELLOW,	CAROLINE L. EDGERLY,
PHEBE M. KENDALL,	JOSEPH A. BALL,
JAMES L. PAINE,	WILLIAM A. START,
ALPHONSO E. WHITE,	ALBERT M. BARNES,
RICHARD J. McKELLEGET,	GEORGE A. ALLISON.

*Resigned February 20. †Elected March 11.

Members of the School Committee, and the Years during which they Served, 1840-1890.

Abbott, Edward,—1868, 1869.
Agassiz, Alexander,—1871.
Albee, Sumner,—1878, 1879, 1880.
Albro, John A.,—1845, 1846, 1847, 1848, 1849, 1855, 1856.
Allen, Charles H.,—1852.
Allen, Frank A.,—1877.*
Allison, George A.,—1888, 1889, 1890.
Ammidon, Philip R., —1870, 1871, 1872, 1873, 1874, 1875, 1876.
Anable, Courtland W.,—1865, 1866.
Appleton, John,—1867, 1868.
Apsey, William S.,—1871, 1873, 1874, 1875, 1876.
Atkinson, William P.,—1867.
Austin, Daniel,—1846.
Averill, Alexander M.,—1859.
Badger, Henry C.,—1866.
Ball, Joseph A.,—1889, 1890.
Barnes, Albert M.,—1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890.
Bowen, Francis, —1850, 1851, 1854, 1856, 1857, 1868, 1869.
Bradford, Isaac,—1873,* 1874,* 1875,* 1876.*
Bradlee, Charles D.,—1858, 1860.
Briggs, George W.,—1870.
Brine, George R.,—1876, 1877, 1878, 1879.
Brooks, Elbridge G., —1841, 1842, 1843, 1844.
Brown, Otis L.,—1879, 1880, 1881.
Buckingham, Joseph T.,—1841, 1842, 1843, 1844.
Carruthers, William,—1863, 1864.
Chamberlain, Henry M.,—1858.
Chaplin, Winfield S.,—1890.
Chase, Edwin B.,—1866, 1867, 1868, 1869.
Child, Francis J.,—1863, 1864, 1865, 1868.
Church, Moses D.,—1884, 1885, 1886, 1887, 1888.
Clarke, Moses,—1848, 1849, 1850, 1851, 1852, 1853, 1854, 1856, 1857, 1858, 1859, 1862.
Coburn, George A.,—1873, 1874, 1878, 1879, 1880.
Cogswell, Edward R., —1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879.
Conlan, Felix,—1887, 1888, 1889,
Conlan, John,—1882, 1883, 1884.
Cooke, Edward,—1862, 1863.
Coolidge, Austin J.,—1865, 1872.
Corcoran, Michael,—1884.
Cox, James, 1870, 1871.
Cushing, George A.,—1845.
Dow, James A.,—1874, 1875, 1876.
Doyle, William E.,—1884.
Draper, Martin, Jr.,—1867, 1868.
Edgerly, Caroline L.,—1889, 1890.
Edwards, Abraham, 1854.*
Emerton, Ephraim,—1886, 1887.
Fairbanks, John L.,—1885, 1886, 1887.
Felton, Cornelius C.,—1849, 1850, 1851, 1852, 1853.
Finnegan, Patrick J., —1885, 1886, 1887, 1888.
Fiske, John, 1869.
Flint, Francis,—1883, 1884, 1885.
Fox, James A.,—1881,* 1882,* 1883,* 1884.*
Foxcroft, Francis A.,—1870, 1871.
Foxcroft, Frank,—1877, 1878.
Gilmore, Henry H.,—1889,* 1890.*
Goodrich, Massena,—1851.
Goodwin, Frank,—1881.
Goodwin, William M.,—1867, 1868.
Green, James D.,—1843, 1846,* 1847,* 1853,* 1860,* 1861.*
Griffin, L. B.,—1842.
Hale, Edwin B.,—1874, 1875, 1876, 1877.
Hall, Franklin,—1859, 1860.
Hall, Edward H.,—1885, 1886, 1887, 1888, 1889, 1890.
Hall, James H.,—1867, 1876, 1877, 1878, 1879, 1880, 1881.
Hall, James M. W.,—1880.*
Hammond, John W., —1867, 1868, 1869, 1873.
Harding, Hamlin R.,—1868, 1869, 1870,* 1871.*
Harrington, Henry F.,—1861.
Henshaw, William,—1843.

Herrick, William A.,—1872.
Hildreth, John L.,—1875, 1876, 1877, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890.
Hinckley, Henry,—1872, 1873, 1874. 1875, 1876, 1877, 1878.
Holland, Frederick W.,—1856, 1857.
Hooker, Anson,—1841, 1842.
Hooker, Anson P.,—1861, 1871, 1872, 1873.
Hoppin, Nicholas,—1843, 1844.
Hosmer, Zelotes,—1850, 1851, 1852, 1853, 1854, 1858.
Houghton, Henry O.,—1859, 1860, 1861, 1862, 1863, 1868, 1869, 1872.*
Howe, U. Tracy,—1861, 1862, 1863.
Hubbard, Sanford B., (Secretary),—1888, 1889, 1890.
Hunt, Freeman,—1884, 1885, 1886, 1887.
Jacobs, Sarah S.,—1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887.
Karr, William S.,—1873, 1874, 1875.
Kelley, Amasa S.,—1858, 1864.
Kendall, Phebe M.,—1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890.
Kingsley, Chester W.,—1860.
Ladd, John S., — 1844, 1845, 1846, 1847, 1849.
Leavitt, George R.,—1871, 1872, 1873, 1874, 1875, 1876, 1877.
Leverett, William,—1844, 1845, 1846.
Livermore, George,—1847, 1848.
Livermore, George W.,—1841.
Livermore, John,—1843, 1844, 1845, 1871.
Longfellow, Alice M., — 1887, 1888, 1889, 1890.
Loomis, Grove H.,—1868, 1869, 1870.
Malley, Edward B.,—1881, 1882, 1883, 1884, 1885, 1886.
Marsters, John M.,—1859.
Mason, Sumner R.,—1862, 1863, 1864, 1865, 1866, 1869, 1870, 1871.
McCurdy, C. L.,—1855.
McDaniel, Samuel,—1873, 1874, 1875.
McDuffie, John,—1860, 1861.
McIntire, Charles J., — 1870, 1871, 1872.
McKelleget, Richard J.,—1888, 1889, 1890.
McKenzie, Alexander, — 1869, 1870, 1871, 1872, 1873, 1874, 1881.
McNeill, George E.,—1873, 1874, 1875.
Mears, David O.,—1869.
Mellen, W. R. G.,—1847, 1848.
Merrill, James C.,—1858, 1859, 1860.
Merrill, J. Warren,—1865,* 1866.*
Metcalf, Charles R.,—1842, 1843.
Mighill, Nathaniel,—1866, 1867.
Miner, George H.,—1869, 1870, 1871, 1872, 1873.
Montague, Samuel L.,—1878,* 1879.*
Morse, Asa P.,—1868, 1869, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1887, 1888, 1889, 1890.
Morse, James R.,—1854, 1855, 1856, 1857, 1858, 1860, 1861, 1862, 1865, 1866, 1867, 1868, 1869.
Munroe, William A.,—1869, 1870, 1871, 1872, 1873, 1877, 1878, 1879.
Murdock, John N.,—1866.
Muzzey, Artemas B.,—1841, 1842, 1850, 1851, 1853.
Muzzey, Henry W.,—1864, 1865, 1866.
Nagle, Garrett E.,—1884, 1885.
Newell, William,—1844.
Norris, Albert L.,—1874, 1875, 1876, 1877.
Norton, Charles E.,—1855.
O'Brien, John,—1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882.
Orcutt, William H.,—1877, 1878, 1879, 1880, 1881, 1882, 1883, 1885, 1886, 1887, 1888, 1889.
Page, William P.,—1856, 1857, 1858.
Paine, James L.,—1887, 1888, 1889, 1890.
Parker, Joseph W.,—1841, 1842, 1844, 1845, 1846, 1847, 1848, 1849, 1854, 1855.
Peabody, Andrew P., — 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881.
Perkins, Frederick T.,—1850, 1851.
Pervear, Hiram K.,—1863, 1864.
Powers, James F.,—1865, 1866.
Parmenter, Ezra,—1867*.
Rand, Benjamin,—1841.
Raymond, Zebina L.,—1855,* 1864.*
Richardson, George C.,—1863.*
Richardson, William Fox,—1877, 1878, 1879, 1880, 1881, 1882.

Ripley, Ezra,—1858.
Russell, Charles Theodore, — 1861,* 1862.*
Russell, William E., — 1885,* 1886,* 1887,* 1888*.
Sargent, John,—1856,* 1857,* 1858,* 1859.*
Saunders, Charles H.,—1868,* 1869.*
Saunders, William A.,—1865.
Sawyer, Jabez A.,—1861, 1862, 1863, 1864, 1869, 1870, 1874, 1883.
Sawyer, Samuel,—1858, 1859.
Scudder, Horace E.,—1877, 1878, 1879, 1880, 1881, 1882.
Scully, Frank P.,—1883.
Scully, Thomas,—1869.
Skinner, Charles A.,—1855, 1856, 1857, 1858, 1859, 1863, 1864, 1865, 1866.
Smith, Clement L.,—1882, 1883.
Start, William A.,—1872, 1873, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890.
Stearns, William A., — 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1854.
Stevens, Edmund H., — 1876, 1877, 1878, 1879, 1880, 1881.
Stevens, George,—1851,* 1852.*
Stewart, Anne Clark,—1890.
Stimpson, Herbert H.,—1868.
Taylor, John B.,—1852, 1853, 1854, 1855, 1860, 1861, 1862, 1863, 1864, 1865, 1866.
Thayer, Henry,—1858, 1859.
Thresher, James M., — 1869, 1870, 1871.
Tilton, Henry N.,—1882, 1883, 1884, 1885, 1886, 1887.
Torrey, Henry W.,—1859, 1860, 1861, 1862.
Turner, Obed C.,—1882.
Tweed, Benjamin F.,—1881, 1882, 1883, 1884, 1885, 1886.
Twining, Kinsley,—1869, 1870, 1871, 1872.
Tyler, Joseph H.,—1867, 1868, 1869, 1870.
Wadman, Theophilus G.,—1875, 1876.
Walcott, Henry P.,—1869, 1870, 1871, 1873.
Walsh, Edward,—1889, 1890.
Warren, Henry W.,—1866, 1867.
Wellington, William W.,—1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1855, 1856, 1857, 1859, 1860, 1861, 1862, 1863, 1864, 1865, and as Secretary from 1865 to 1887, 22 years.
White, Alphonso E., — 1888, 1889, 1890.
Wilkinson, Nathan,—1852, 1853.
Willard, Sidney,—1848,* 1849,* 1850.*
Willis, Lemuel,—1843, 1844, 1845.
Williston, Lyman R.,—1869, 1870.
Wilson, John,—1878, 1879, 1880.
Wyman, Morrill,—1868, 1869.

Length of Service.

For one year:

Austin; Allen, C. H.; Allen, Frank A.; Averill; Atkinson; Agassiz; Badger; Briggs; Cushing; Chamberlain; Chaplin; Corcoran; Doyle; Edwards; Fiske; Griffin; Goodrich; Goodwin, Frank; Henshaw; Harrington; Herrick; Hall, J. M. W.; Kingsley; Livermore, George W.; McCurdy; Murdock; Marsters; Mears; Newell; Norton; Parmenter; Richardson, George C.; Ripley; Rand; Scully, Frank; Scully, Thomas; Stewart, Miss; Saunders, William A.; Stimpson; Turner. 40

For two years:

Anable; Appleton; Abbott; Bradlee; Ball; Cooke; Carruthers; Coolidge; Cox; Draper; Edgerly; Emerton; Foxcroft, F. A.; Foxcroft, Frank; Goodwin, William M.; Gilmore; Hooker, Anson; Hoppin; Holland; Hall, F.; Kelley; Livermore, George; Metcalf; Mellen; McDuffie; Merrill, J. W.; Mighill; Montague; Nagle; Perkins; Powers; Pervear; Raymond; Russell, Charles T.; Smith; Stevens, George; Sawyer, Samuel; Saunders, C. H.; Thayer; Warren; Williston; Wyman; Wadman; Walsh.. 44

*Mayor, Chairman *ex officio*.

For three years:

Albee; Allison; Brown; Conlan, F.; Conlan, J.; Dow; Flint; Fairbanks; Howe; Hubbard; Karr; Leverett; Loomis; Merrill, James C.; Muzzey, H. W.; McIntire; McDaniel; McNeill; McKelleget; Page; Thresher; Willis; Willard; Wilson; White. 25

For four years:

Brooks; Buckingham; Bradford; Brine; Child; Chase; Fox; Hooker, Anson P.; Hammond; Harding; Hale; Hunt; Livermore, J.; Longfellow, Miss; Norris; Paine; Russell, William E.; Sargent; Torrey; Twining; Tyler; Walcott. 22

For *five years:*

Apsey; Coburn; Church; Felton; Ladd; Miner; Muzzey, A. B. 7

For six years:

Green; Hosmer; Hall, E. H.; Malley; Richardson, William F.; Scudder; Stevens, E. H.; Tilton; Tweed. 9

For seven years:

Albro; Ammidon; Bowen; Hall, James H.; Hinckley; Jacobs, Miss; Leavitt; McKenzie. 8

For eight years:

Houghton; Mason; Munroe; O'Brien; Stearns; Sawyer, J. A. . . . 6

For nine years:

Barnes; Skinner. 2

For ten years:

Parker, Joseph W. 1

For eleven years:

Cogswell; Kendall, Mrs.; Taylor. 3

For twelve years:

Clarke; Orcutt; Peabody. 3

For thirteen years:

Hildreth; Morse, J. R. 2

For fourteen years:

Start, William A. 1

For fifteen years:

Morse, Asa P. 1

For forty years:

Wellington, William W.; eighteen years as Committeeman, twenty-two years as Secretary of the Board 1

Hubbard, Sanford B.; Secretary of the Board since 1887.

Hale, Edwin B.; Superintendent of Schools,—1868, 1869, 1870, 1871, 1872, 1873.

Cogswell, Francis; Superintendent of Schools since September, 1874.

VALEDICTORY ADDRESS.

VALEDICTORY ADDRESS

OF

Hon. HENRY H. GILMORE, Mayor.

Gentlemen of the City Council:—

Two eventful years in the civil history of Cambridge are now drawing to a close.

You who have participated in the conduct of public affairs, with commendable harmony and assiduity, can review the work performed with complacency and satisfaction.

Divine Providence has smiled upon our city, and has blessed her people. They have been spared from fatal epidemics; from disaster of fires and floods. Her industries have not been seriously embarrassed by labor troubles and strikes. New and important business interests have located within our borders. A condition of quiet and safety, prosperity and contentment, has uninterruptedly continued.

As among the largest cities of the United States, Cambridge proudly invites comparison of unimpaired resources, social condition, educational facilities, prudent and faithful management of the public business.

For the present year it is true that you have successfully provided, and under a reduced rate of taxation, for demands that appeared financially embarrassing. All obligations anticipated and incurred have been promptly paid. Several extraordinary demands, amounting to more than twenty-five thousand dollars, have also been paid. No account properly chargeable to either financial year, to my knowledge, remains unpaid. There was, remaining in the treasury at the end of the fiscal year, an unexpended free balance of five thousand five hundred dollars.

It would be difficult to conduct the finances of the city upon a basis more prudent or more gratifying. An enlightened con-

stituency such as you represent, and which invested you with great powers and responsibilities, will not hesitate to award to you their grateful appreciation of your honorable services in their behalf.

The events impressed most vividly upon the minds of our fellow-citizens were in connection with the tender and acceptance of the several gifts from Mr. Frederick H. Rindge, and ceremonies incident thereto. The important character of these great donations, and the undeniable influence for good they severally will exert upon the Cambridge of the future, emphasize the comprehensive judgment of Mr. Rindge as much as they attest his generosity.

The public thought, which makes and controls the public conscience, is largely affected by the surroundings with which the people are brought in contact. Everything calculated to elevate the public taste will also fix a higher standard of public morals.

The public buildings of the city recently erected, and under construction, will be object lessons of great value.

To have been members of the city government first to occupy this new City Hall will always afford each one of us a cause for sensible gratification and pride.

Consequent upon the rapid growth of the city in population came well-grounded requests for extended school accommodations. The necessity was urgent and recognized. The Putnam school-house, East Cambridge, completed this year, stands a model of excellence in school-house construction. The Peabody, on Linnæan Street, combines all modern improvements in spacing, heating and ventilating, thus making the school-rooms wholesome and attractive. The new English High School house, estimated to cost more than two hundred thousand dollars, is nearly roofed in, and will be, when completed, unexcelled in its appointments. The new Ward 4 school-house will be equal to the best in style of architecture, and adaptability to the purposes contemplated by its designers, and will creditably meet a condition altogether to be regretted, and that could not longer remain unheeded.

For the complete construction of these several school-buildings the sum of three hundred and fifty thousand dollars, at least, will have been required.

There has long been a desire to reinforce the Fire Depart-

ment with additional apparatus. Even ten years ago it was demonstrated that Ward 4 was not well covered. With equal force was pressed the necessity of stationing another steamer in the Lower Port, where manufacturing establishments were multiplying, with a valuation already ranging above ten millions of dollars. Provision has now been made for Ward 4, through the purchase of land and the erection of an engine-house to accommodate a steam fire engine already contracted for. Undoubtedly your successors will act, with wise discretion, in regard to the needs of the southeasterly section of the city for better protection against fire.

Effectually to secure the purity of the waters of Fresh Pond,—acting upon the recommendations of the Water Board, you have provided the means for acquiring lands necessary to complete the circuit of the Pond. The great value and importance of these acquirements will be more fully appreciated in the future. The only unsettled claims for lands taken around Fresh Pond are those of the Boston Ice Company, Dr. Somers, and Smith estate. The marketable value of the Cambridge Water Works, with all its franchises, under the hammer, today, I have no doubt, is equal to the entire net debt of the city, say two and one-half millions of dollars.

I do not propose to detain you here for the purpose of reviewing the committee work of the year. In volume it has been very great, and the demand upon your time unprecedented. The record of this city government is made. That it will stand on as high a level, at least, as any previously made, I dare to assert.

You have permitted nothing to avert your attention from your public duties, and the success of the present administration, so far as it has been successful, is due to your hearty coöperation in all measures favorably involving the city's interests.

The system of accounting practiced by the City Treasurer and Auditor, with the checks and balances provided and scrupulously observed, will bear the most critical investigation, and elicit only approval from those best qualified to judge.

The heads of departments, one and all, deserve to have, as they do have, the confidence of the public. I desire again to place on record my high appreciation of their worth and of the value of their services in the several departments to which they are attached.

To the gentlemen associated upon the Commission to revise the City Charter I desire to express my sense of obligation, with thanks for their well-considered service. To any one of them we would intrust our own business affairs. To them the subject matter to be considered was not new. Nearly all had had experience in the government of the city, and many of them had served the public officially for several years with great acceptation. Their unanimous report was made up after prolonged and patient investigation and discussion. I feel convinced that a thoughtful public will, sooner or later, possibly with some minor qualifications, require its adoption.

Let us pause for a moment as we recall the sad intelligence, coming to us yesterday, of the death of Brig. Gen. Alfred F. Holt, Surgeon-General of the Commonwealth. A son of New Hampshire, he served this state of his adoption with rare bravery and fidelity, and to her patriotically offered himself and all he was. To this city of his chosen residence he has, since the war, given the benefit of his great professional attainments.

A great, warm heart has stopped beating. A keen and comprehensive mind has ceased its activities.

We can only attempt to emulate his virtues. To remember him is a sweet inheritance.

The Mayor gratefully acknowledges the courtesy and kindness invariably bestowed upon him by every member of this year's government, and by all others connected with the public service. For the remainder of my life, be its span longer or shorter, each one will be remembered with deep regard, and a lively interest will be felt in your future welfare.

Wishing you, gentlemen, and all associated in the government in whatever capacity, together with our successors, a very happy and prosperous New Year, I declare this convention dissolved.

HENRY H. GILMORE.

December 30, 1890.

APPENDIX.

APPENDIX.

ORDINANCES

PASSED IN 1890.

An Ordinance in Amendment to an Ordinance in Relation to Truants.

Be it ordained by the City Council of the City of Cambridge as follows: —

Section 1, of Chapter 38, of the Revised Ordinances of 1889, is hereby amended in the eighth line by inserting after the word "ignorance" the words, "and such children as persistently violate the reasonable rules and regulations of the common schools."

As amended this ordinance will stand as follows: —

Section 1. Any minor between the ages of seven and fifteen years convicted of being an habitual truant, or of wandering about in the streets or public places, having no occupation or business, not attending school, and growing up in ignorance, and such children as persistently violate the reasonable rules and regulations of the common schools, shall be committed to the Almshouse for such time, not exceeding two years, as the justice of the Third District Court of Eastern Middlesex may determine. The Almshouse of the City of Cambridge is the institution provided for the confinement, discipline and instruction of such children.

[*Adopted February* 5, 1890.]

Approved by the Judge of Probate February 11, 1890.

An Ordinance in Amendment of an Ordinance in Relation to Water Works.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 24, of Chapter 42, of the Revised Ordinances of 1889, is hereby amended by striking out the entire section and inserting in place thereof the following new section: —

SECTION 24. All water required by the city in its various departments shall be furnished free of charge.

[*Adopted February* 5, 1890.]

An Ordinance in Relation to the Salary of the Auditor of Accounts.

Be it ordained by the City Council of the City of Cambridge, as follows:—

From and after the first day of February, Eighteen Hundred and Ninety, the salary of the Auditor of Accounts shall be at the rate of Twenty-one Hundred Dollars a year.

[*Adopted February* 11, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Sinking Funds.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 4, of Chapter 34, of the Revised Ordinances of 1889, is hereby amended in the second line by striking out the words "Authorized after March 20, 1872." Also, in the eighth, ninth, tenth, eleventh and twelfth lines by striking out the clause, "And for a sinking fund to redeem the funded debt of the city created prior to March 20, 1872, excluding the water loan, there shall be annually appropriated and raised by taxation the sum of ten thousand dollars."

[*Adopted February* 25, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Telegraph and Other Electric Lines, Cables and Conduits.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 3, of Chapter 37, of the Revised Ordinances of 1889, is hereby amended by adding at the end thereof the following: "A hearing upon every such petition shall be given to all parties interested, before the Committee on Roads and Bridges of the Board of Aldermen, who shall recommend to said Board such action as may be deemed expedient. Notice of the filing of every such petition, and of the hearing thereon, shall be given by the petitioner or petitioners, to all persons owning or occupying the land along the streets or ways upon which locations are prayed for, which notice shall state briefly the streets or ways, or the parts thereof to which such petition relates."

[*Adopted March* 25, 1890.]

An Ordinance Establishing the Salary of the Assistant City Physician.

Be it ordained by the City Council of the City of Cambridge, as follows: —

The salary of the Assistant City Physician shall be at the rate of Fifteen Hundred Dollars a year, the same to date from the first day of May, 1890.

[*Adopted May* 6, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Water Works.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Chapter 42, of the Revised Ordinances of 1889, is hereby amended by adding the following new section:

"SECTION 26. There shall be paid to the person chosen by the Trustees of the Sinking Fund of the Water Works, as their Secretary and Treasurer, an annual salary of Two Hundred Dollars, beginning on the first day of December, eighteen hundred and eighty-nine, said salary to be charged to the maintenance account of the Water Works."

[*Adopted May* 6, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Accounts and Finance.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 12, of Chapter 2, of the Revised Ordinances of 1889, is hereby amended by adding at the end thereof the following: "And provided further, that he may from time to time, without the signature or action of any committee, draw his orders upon the treasurer for the payment of such sums as he may deem necessary, to be paid out of any appropriation which may be made and set apart by the City Council as a fund to meet emergencies, but never to exceed the amount of such appropriation."

[*Adopted June* 10, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Water Works.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 23, of Chapter 42, of the Revised Ordinances of 1889, is hereby amended in the last paragraph but two, relating to meters, so that the same shall read as follows, viz.:

"The Board shall have power to ascertain by meter the quantity used in any case, and a meter shall be applied whenever in the judgment of the Board it is expedient. The charge for metered water other than for manufacturing purposes shall be at the rate of two cents for each one hundred gallons. The charge for metered water for manufacturing purposes shall be at the rate of one and one-half cents for each one hundred gallons. When the water used by any one taker shall amount to more than five million gallons in any one year, commencing with the first day of July, then the charge shall be at the rate of one cent for each one hundred gallons of the excess over that quantity. In no case, however, shall the minimum charge for any metered premises be less than ten dollars per annum."

This ordinance shall take effect on and after July 1, 1890.

[*Adopted June* 18, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to the Sale of Junk, Old Metals, and Second-Hand Articles.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Chapter 21, of the Revised Ordinances of 1889, is hereby amended, so that the same shall read as follows:

SECTION 1. No person shall keep a shop for the purchase, sale or barter of junk, old metals, or second-hand articles, unless he receives a license therefor from the Mayor and Aldermen. All such licenses shall, unless sooner revoked, continue in force until the first day of May then next ensuing. The fee for such license shall be two dollars, and no license shall be transferable.

SECT. 2. Every keeper of a shop for the purchase, sale or barter of junk, old metals, or second-hand articles, shall keep a book in which shall be written, at the time of every purchase of any such article, a description thereof and the name, age and residence of the person from whom, and the day and hour when, such purchase was made; and such book shall at all times be open to the inspection of the Mayor, or either of the Aldermen, and of any person by the Mayor and Aldermen authorized to make such inspection.

SECT. 3. Every keeper of such a shop as is mentioned in the preceding section shall put in some suitable and conspicuous place on his shop a sign having his name and occupation legibly inscribed thereon in large letters.

SECT. 4. Every such shop and all articles of merchandise therein may at all times be examined by the Mayor, or either of the Aldermen, or by any person authorized by the Mayor and Aldermen to make such examination.

SECT. 5. No keeper of such a shop, unless he deals solely in second-hand books or furniture, shall directly or indirectly either purchase or receive by way of barter or exchange any junk, old metals or second-hand articles from a minor, knowing or having reason to believe him to be such.

SECT. 6. No article purchased or received by the keeper of such a shop shall be sold until a period of at least one week from the date of its purchase or receipt has elapsed, unless the name and address of the person to whom such article has been sold, with such other facts as may be necessary to facilitate the

tracing of such article, have been entered on the book mentioned in section two of this chapter.

SECT. 7. No keeper of such a shop shall have his shop open for the transaction of business, nor shall he purchase any of the aforesaid articles, except between sunrise and nine o'clock in the evening of any week day except Saturday, on which day such shop may be kept open and such articles purchased from sunrise until ten o'clock in the evening.

SECT. 8. No person shall, without a license from the Mayor and Aldermen, collect or deal in junk, old metals, rags or second-hand articles; and no person thus licensed shall, directly or indirectly, either purchase or receive, by way of exchange or barter, any of said articles of any minor, knowing or having reason to believe him to be such. Every person receiving such a license shall pay for the same, to the use of the City of Cambridge, a fee of five dollars before the delivery thereof to him, and no such license shall be transferable.

SECT. 9. Every vehicle used in the collection of junk, old metals, rags, or second-hand articles, shall be at all times subject to the inspection of the Mayor and Aldermen, or of any person by them authorized, and shall have the name of the owner and the number of his license placed upon the outside of each side thereof, in plain, legible letters and figures of not less than one and one-half inches in height, and so that the same may be distinctly seen.

SECT. 10. All the provisions of this chapter shall be incorporated in every license granted.

[*Adopted June* 19, 1890.

An Ordinance Relating to Electric Wires, and Establishing the Office, Powers and Duties of Inspector of Wires.

Be it ordained by the City Council of the City of Cambridge, as follows: —

SECTION 1. The Mayor and Aldermen shall forthwith appoint an Inspector of Wires, who shall hold office until removed by the Mayor and Aldermen, or until his office is otherwise vacated. His salary shall be at the rate of five hundred dollars per annum.

SECT. 2. The Inspector of Wires shall have supervision of

all electrical and other metallic wires erected upon, over, or under any street or building, and of all wires designed to carry electric light and power current within buildings, throughout the city; and shall have authority over and shall inspect the condition of such wires, their insulation and attachment; shall require any and all persons and corporations owning or operating wires to construct and arrange all posts, cross-arms, wires, fixtures, insulations, attachments and appliances so as to secure safety, and to conform to the conditions and requirements of Chapter 404, of the Acts of the Commonwealth of Massachusetts for the year 1890, and of all other laws and ordinances relating to electric wires. And he shall see that all laws, ordinances, and regulations relating to electric wires and conduits are strictly enforced.

SECT. 3. The Inspector of Wires shall see that all persons and corporations owning or operating electric wires shall affix proper tags, or marks of designation, at the places and in the manner which is required by law; and shall give notice to such persons and corporations whenever any of their attachments, insulators, supports, or appliances are unsuitable or unsafe, or their tags or marks are insufficient or illegible.

SECT. 4. He shall also, at least once in each year, thoroughly inspect the condition of all posts, carrying electric or other wires upon or over the streets and buildings within the city, in order to ascertain that they are free from decay or other injury rendering any of them liable to failure; and in all cases where a person or corporation owning, leasing, or operating wires shall neglect or refuse to cut out and remove wires abandoned for use, or unprovided with proper tags or marks, as required by Section 6 of this ordinance, said Inspector of Wires shall remove the same and collect the expense thereof from the said person or corporation.

SECT. 5. Every person or corporation owning, leasing, or operating wires as before described shall, within twenty-four hours after notice served by the Inspector of Wires, make such substitution or repairs of posts, supports, cross-arms, or stays for the safe carrying of such wires as may be required by said Inspector of Wires.

SECT. 6. Every such person or corporation shall cut out and

remove all wires abandoned for use, and all wires which shall be unprovided with the required tag or mark, after six months from the appointment of said Inspector, and within twenty-four hours after notice to do so from the Inspector of Wires.

SECT. 7. All electrical metallic connections with the interior of buildings shall be made safe, and arranged in a manner satisfactory to the Inspector of Wires, by the person or corporation owning, leasing, or operating the electric system.

SECT. 8. No such person or corporation shall permit pieces of wires to be left on the surface of any street or sidewalk; nor permit unused coils or loose ends of wires to remain attached to any cross-arm or post more than twenty-four hours.

SECT. 9. Upon the request of the Inspector of Wires, the persons or corporations operating electric or other wires upon, over, or under any street or building, shall, within fifteen days thereafter, furnish accurate lists of the location of their poles, the number of cross-arms thereto affixed, and the number of wires thereto attached; the location of sub-ways, manholes, and other information in relation to their method, together with the locations where service is rendered, viz., telegraphic, telephonic, electric lighting, specifying either arc or incandescent, or for electric power.

SECT. 10. The Inspector of Wires, upon application to any person or corporation operating electric or other wires within the city, shall be furnished with such information as to the kind, size, and tested strength of supporting or service wires; the average volts charged and used, together with such other information as may by him be considered necessary to the faithful and effectual discharge of his duties under this ordinance.

SECT. 11. Whoever violates or neglects to perform any provision of this ordinance shall be fined not less than ten dollars nor more than twenty dollars for each and every offence.

[*Adopted July* 9, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Streets.

Section 49, of Chapter 36, of the Revised Ordinances of 1889, is hereby amended by inserting after the word "and," at the beginning of the seventh line, the words "whoever habitually

loiters and remains upon a sidewalk in said manner, after having been within three months previously requested by a police officer to cease so doing, and" so that this section shall then read as follows: —

SECTION 49. "Whoever remains for a longer time than twenty minutes upon a sidewalk in such a manner as to obstruct the free passage of foot travellers, or upon any doorstep, portico, or other projection from any building, to the annoyance or disturbance of any person, shall be liable to a penalty of not less than three nor more than twenty dollars; and whoever habitually loiters and remains upon a sidewalk in said manner, after having been within three months previously requested by a police officer to cease so doing, and whoever remains on a sidewalk in said manner for more than five minutes after being requested by a police officer to move on, shall be liable to like penalty."

[*Adopted July* 9, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Fire Department.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Chapter 16, of the Revised Ordinances of 1889, is hereby amended in Section 4, by striking out the word "requested," where the same occurs, and inserting in place thereof the word "required."

Also, in Section 25, by transferring the entire section numbered as 27, and prefixing the same to said Section 25.

Also, by inserting as Section 27, in place of the paragraph transferred, the following: "Section 27. The Board of Engineers shall thoroughly examine into all places where shavings and other combustible materials are deposited or collected, and cause the same to be removed by the owners or other occupants of any such places, at their expense, whenever the security of the city against fire requires it."

As amended the several sections will read as follows:

SECTION 4. The Engineers shall constitute a Board of Engineers, a majority of whom shall form a quorum, and of which, in the absence of the Chief Engineer, the First Assistant Engi-

neer shall be presiding officer; and they may appoint a clerk, and make such rules and regulations for their own government as they may see fit. They shall be responsible for the discipline, good order and proper conduct of the whole department, and for the care of all houses, steam fire engine horses, hose carriages, and other furniture and apparatus thereto belonging. They shall have the superintendence and control of all the reservoirs belonging to the city. They shall have the control of all the engine houses and other houses used for the purposes of the fire department, and of all furniture and apparatus thereto belonging, and of the steam fire engines and all other fire apparatus belonging to the city, and over the officers and members of the several companies attached to the fire department; and they may make such rules and regulations for the better government, discipline, and good order of the department, and for the extinguishing of fires, as they may think expedient, the same not being repugnant to the laws of this Commonwealth or to any ordinance of the city, but subject to the approval of the Mayor and Aldermen. The Assistant Engineers shall report their absences from such fires as they are required to attend, with the reasons therefor, to the Chief Engineer, who shall keep a record thereof, and of his own absences from fires.

SECT. 25. The Board of Engineers shall make such rules and regulations as in their judgment shall, as far as possible, prevent refreshments being furnished at fires to any persons except members of the Fire Department. No intoxicating liquors of any kind shall be carried into any of the houses used by the Fire Department; nor shall any gambling be permitted therein.

SECT. 27. The Board of Engineers shall thoroughly examine into all places where shavings and other combustible materials are deposited or collected, and cause the same to be removed by and at the expense of the owners or other occupants of any such places, whenever the security of the city against fire requires it.

[*Adopted July* 29, 1890.]

An Ordinance in Amendment of an Ordinance in Relation to Streets.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 49 of Chapter 36 of the Revised Ordinances of 1889 is hereby amended by inserting after the word "and," at the beginning of the seventh line, the words, "whoever habitually loiters and remains upon a sidewalk in said manner after having been within three months previously requested by a police officer to cease so doing, and," so that this section shall then read as follows:

SECTION 49. "Whoever remains for a longer time than twenty minutes upon a sidewalk in such a manner as to obstruct the free passage of foot travellers, or upon any door-step, portico, or other projection from any building, to the annoyance or disturbance of any person, shall be liable to a penalty of not less than three nor more than twenty dollars; and whoever habitually loiters and remains upon a sidewalk in said manner after having been within three months previously requested by a police officer to cease so doing, and whoever remains upon a sidewalk in said manner for more than five minutes after being requested by a police officer to move on, shall be liable to like penalty."

An Ordinance in amendment of an Ordinance in Relation to Streets, approved July 9, 1890, is hereby repealed.

[*Adopted October* 10, 1890.]

An Ordinance in Amendment of an Ordinance Relating to Electric Wires and Establishing the Office, Powers and Duties of Inspector of Wires.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 7 of "An Ordinance Relating to Electric Wires, and Establishing the Office, Powers and Duties of Inspector of Wires," is hereby amended by striking out the existing section and inserting in place thereof the following new section:

SECTION 7. All wires, appliances and apparatus in the interior of a public building or on private premises, and which are intended for the transmission of electricity, and to be connected with an outside circuit, shall be made and at all times kept safe and shall be placed, arranged, attached, changed and maintained by the person or corporation owning or using the same to the

satisfaction of the Inspector of Wires; and the Inspector of Wires shall have access at all reasonable times to such wires, appliances and apparatus. Before any person shall arrange, affix or change any such wires, appliances and apparatus, he shall notify the Inspector of Wires, who shall be given full opportunity to inspect the said wires and their arrangement and fixtures before the same are covered or enclosed. Wires in the interior of buildings and on private premises, intended for the transmission of electricity, shall not be connected with an outside circuit which crosses or runs along or over any street or way of the city without written permission therefor having been first obtained irom the Inspector of Wires.

[*Adopted October* 10, 1890.]

An Ordinance in Amendment of the Revised Ordinances of 1889.

Be it ordained by the City Council of the City of Cambridge, as follows: —

The Revised Ordinances of 1889 are hereby amended in the following particulars, viz.: —

In Chapter 7, Section 13: By striking out the word "about" in the twenty-ninth line and inserting in place thereof the word "above"; also, in same Chapter, Section 16, by striking out the word "that" in the fifth line and inserting in place thereof the word "than."

In Chapter 19, Section 7: By striking out the word "words" and inserting in place thereof the word "letters."

[*Adopted October* 10, 1890.]

An Ordinance for the Protection of Police Signal Boxes.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 1. Whoever, not being a member of the police department or authorized by such member shall open or attempt to open any police signal box, and whoever shall interfere, tamper, or meddle with, break, cut, injure or deface any such box, or wire joined to the same, or the post or other structure to which

it may be affixed; and whoever shall post any bill or placard upon such signal box, post or structure, shall be liable to a penalty of not less than five nor more than twenty dollars for each offence.

[*Adopted December* 23, 1890.]

An Ordinance in Amendment of an Ordinance, entitled "Streets."

Be it ordained by the City Council of the City of Cambridge, as follows:—

"Section 39 of Chapter 36 of the Revised Ordinances of 1889 is hereby amended by striking out the word "hereinafter," in the second line, and inserting in place thereof the words "hereinotherwise," and also by inserting after the word "trees" in the third line, the words "post, pole, or other article."

As amended this section will read as follows:—

"SECTION 39. No person shall deposit in any street, except as hereinotherwise provided, any dead shrubs or trees, trimmings of shrubs or trees, post, pole or other article, earth from cellars, or any rubbish, unless the same shall be immediately removed therefrom, at the expense of the owner, or other person making such deposit, provided that during the months of April and October in each year owners or occupants of premises may, on twenty-four hours' notice to the Superintendent of Streets, obtain the removal of such dead shrubs and trees, or trimmings of shrubs and trees as may have accumulated therein, the same to be deposited in the street against the sidewalk adjoining said premises."

[*Adopted December* 23, 1890.]

An Ordinance in Amendment of an Ordinance Relating to Streets.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 27, of Chapter 36, of the Revised Ordinances of 1889, is hereby amended by adding the following words, "or upon or from any bridge."

Section 28 of said chapter is hereby amended by striking out

the whole of the same, and inserting the following section in its place: "No person shall shoot with or use a bow and arrow, or air gun, in a street, or upon or from any bridge."

[*Adopted December* 23, 1890.]

An Ordinance in Relation to the Salary of the City Clerk.

Be it ordained by the City Council of the City of Cambridge, as follows:—

On and after the first day of January, 1891, the salary of the City Clerk shall be at the rate of Three Thousand dollars a year.

[*Adopted December* 30, 1890.]

An Ordinance in Relation to the Salary of the Assistant City Clerk.

Be it ordained by the City Council of the City of Cambridge, as follows:—

On and after the first day of January, 1891, the salary of the Assistant City Clerk shall be at the rate of Twelve Hundred dollars a year.

[*Adopted December* 30, 1890.]

An Ordinance in Amendment to an Ordinance in Relation to Streets.

Be it ordained by the City Council of the City of Cambridge, as follows: —

Section 39, of Chapter 36, of the Revised Ordinances of 1889, is hereby amended in the sixth line by striking out the words "April and October," and inserting in place thereof the words "May and November."

[*Adopted January* 27, 1891.]

An Ordinance in Amendment of an Ordinance in Relation to Water Works.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 13 of Chapter 42 of the Revised Ordinances of 1889 is hereby amended in the tenth line, by striking out the words "equal to three" and inserting in place thereof the words "not less than three and one-half."

As amended the last sentence of this section will stand as follows:

"The Treasurer shall, annually on or before the thirtieth day of November, pay over to the trustees of the sinking funds, provided in the first act named in the third section of this chapter, a sum not less than three and one-half per cent. of the par value of the then outstanding water bonds."

[*Adopted February* 24, 1891.]

An Ordinance in Relation to the Rates Charged for the Use of Water.

Be it ordained by the City Council of the City of Cambridge, as follows;—

For the year beginning on the first day of May, 1891, a discount of ten per cent. from the existing rates for water shall be allowed to all consumers except such as are supplied through meters.

[*Adopted March* 10, 1891.]

An Ordinance in Amendment of an Ordinance in Relation to Assessors and Taxes.

Be it ordained by the City Council of the City of Cambridge as follows: —

Chapter 4, of the Revised Ordinances of 1889, is hereby amended in Section 7 by striking out the words "Whoever pays his taxes on or before the tenth day of October shall be entitled to a discount of three per cent., and." Also in Section 8, by striking out the words "first day of November," and inserting in place thereof the words "tenth day of October."

The sections before mentioned are hereby transposed, so that Section 8 shall be numbered Section 7, and Section 7 shall be numbered Section 8.

As amended, these Sections will read as follows: —

SECTION 7. Upon all taxes remaining unpaid upon the tenth day of October, interest shall be charged at the rate of six per cent. per annum.

SECT. 8. On the first day of November the Treasurer shall issue his summons to all delinquents, that, if their taxes are not paid within ten days from date thereof, with twenty cents for said summons, he will then proceed to collect the same according to law; and he shall give notice by attaching this section to all tax bills.

[*Adopted March* 10, 1891.]

An Ordinance in Amendment of an Ordinance for the Protection of Police Signal Boxes.

Be it ordained by the City Council of the City of Cambridge, as follows: —

An ordinance entitled "An Ordinance for the Protection of Police Signal Boxes," approved December 23, 1890, is hereby amended by inserting after the word "department," the words "or of the department of the Inspector of Wires," so that the ordinance as amended will read as follows:

"Whoever, not being a member of the Police Department, or of the department of the Inspector of Wires, or authorized by such member, shall open, or attempt to open, any police signal box, or whoever shall interfere, tamper or meddle with, break, cut, injure, or deface any such box, or wire joined to the same, or the post or other structure to which it may be fixed; and whoever shall post any bill or placard upon such signal box, post or structure, shall be liable to a penalty of not less than five nor more than twenty dollars for each offence."

[*Adopted April* 21, 1891.]

An Ordinance in Amendment of an Ordinance in Relation to Salaries.

Be it ordained by the City Council of the City of Cambridge, as follows:

SECTION 1 of Chapter 29 of the Revised Ordinances of 1889 is hereby amended by striking out in the 16th and 17th

lines the following words and figures, viz.: "Sergeants of Police detailed as inspectors, when on that duty, per day, $3.25," and inserting in place thereof the following:

Chief Inspector of Police	$1,248 00
Inspector of Police, per day	3 25

[*Adopted April* 21, 1891.]

An Ordinance in Amendment of an Ordinance Relating to Electric Wires and Establishing the Office, Powers and Duties of Inspector of Wires.

Be it ordained by the City Council of the City of Cambridge, as follows: —

An ordinance entitled "An Ordinance Relating to Electric Wires, and Establishing the Office, Powers and Duties of Inspector of Wires," approved July 9, 1890, and amended October 10, 1890, is hereby further amended by inserting after Section 10 of said ordinance, the following new sections, viz.:

SECT. 11. The Inspector of Wires shall, by virtue of his office, be the Superintendent of the Fire Alarm Telegraph, the Police Signal System, and all other electric wires and wire systems now or hereafter owned by the city. He shall have the care and management of the wires, apparatus and machinery, and other property connected therewith; and shall keep the same at all times in good working order, and shall have access to all rooms and places necessary for these purposes. All additions to said systems, and all new electric wires and appliances erected by the city, or for its use, shall be erected under his supervision, and to his satisfaction.

SECT. 12. Subject to the approval of the Committee on Finance, he shall appoint an Assistant Superintendent, and shall employ such other assistants as may be required. They may, with the approval of said committee, be removed by him at any time, but they shall continue in service until such removal, or until their offices are otherwise vacated.

The section heretofore numbered as Section 11 shall be numbered Section 13.

[*Adopted April* 21, 1891.]

MAYORS

OF

THE CITY OF CAMBRIDGE,

FROM 1846 TO 1891.

James D. Green . . .	from	May,	1846,	to April,	1848.
Sidney Willard . . .	"	April,	1848,	to April,	1851.
George Stevens . . .	"	April,	1851,	to April,	1853.
James D. Green . . .	"	April,	1853,	to April,	1854.
*Abraham Edwards . .	"	April,	1854,	to January,	1855.
Zebina L. Raymond . .	"	January,	1855,	to January,	1856.
John Sargent	"	January,	1856,	to January,	1860.
†James D. Green . . .	"	January,	1860,	to July 24,	1861.
‡Charles Theo. Russell	"	July 31,	1861,	to January,	1863.
George C. Richardson .	"	January,	1863,	to January,	1864.
Zebina L. Raymond . .	"	January,	1864,	to January,	1865.
J. Warren Merrill . .	"	January,	1865,	to January,	1867.
Ezra Parmenter . . .	"	January,	1867,	to January,	1868.
Charles H. Saunders .	"	January,	1868,	to January,	1870.
Hamlin R. Harding . .	"	January,	1870,	to January,	1872.
Henry O. Houghton .	"	January,	1872,	to January,	1873.
Isaac Bradford . . .	"	January,	1873,	to January,	1877.
Frank A. Allen . . .	"	January,	1877,	to January,	1878.
Samuel L. Montague .	"	January,	1878,	to January,	1880.
James M. W. Hall . .	"	January,	1880,	to January,	1881.
James A. Fox	"	January,	1881,	to January,	1885.
William E. Russell . .	"	January,	1885,	to January,	1889.
Henry H. Gilmore . .	"	January,	1889,	to January,	1891.
Alpheus B. Alger . .	"	January,	1891.	Now in office.	

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*Municipal year changed. †Resigned. ‡First elected by the City Council.

GOVERNMENT

OF THE

CITY OF CAMBRIDGE.

1891.

Mayor.

HON. ALPHEUS B. ALGER.

Aldermen.

WILLIAM A. BANCROFT, *President.*

JAMES F. AYLWARD,
WILLIAM A. BANCROFT,
SILAS E. BUCK,
JOHN S. CLARY,
WILLIAM E. DOYLE,
JOHN R. FAIRBAIRN,
EDWARD B. JAMES,
JOHN E. PARRY,
E. BURT PHILLIPS,
WILLIAM M. TOWNSEND.

Aldermen, by Wards.

Ward 1. Aldermen BANCROFT and JAMES.
" 2. " DOYLE and PHILLIPS.
" 3. " AYLWARD, CLARY and FAIRBAIRN.
" 4. Alderman TOWNSEND.
" 5. Aldermen BUCK and PARRY.

Clerk.

WALTER W. PIKE.

Common Council.

EDWARD C. WHEELER, *President.*

HERMAN BACHMAN,
LOUIS F. BALDWIN,
WILLIAM J. BREEN,
THOMAS CAWLEY,
HERBERT A. CHASE,
CHARES W. CHENEY,
EDWARD A. COUNIHAN,
BANCROFT G. DAVIS,
WILLIAM R. ELLIS,
WELLINGTON FILLMORE,
BENJAMIN HOWE,
WILLIAM R. HOWLAND,
ANDREW J. JONES,
FREDERICK W. MACDONALD,
J. HENRY RUSSELL,
GEORGE W. SEAVERNS,
MARSHALL N. STEARNS,
RICHARD W. SUTTON,
EDWARD C. WHEELER,
HENRY D. WINTER.

Common Council, by Wards.

Ward 1. Messrs. JONES, DAVIS, ELLIS and STEARNS.
" 2. Messrs. BALDWIN, FILLMORE, MACDONALD, RUSSELL and WHEELER.
" 3. Messrs. BACHMAN, BREEN, CAWLEY and COUNIHAN.
" 4. Messrs. CHASE, CHENEY, SEAVERNS, SUTTON and WINTER.
" 5. Messrs. HOWE and HOWLAND.

Clerk.

EDWARD J. BRANDON.

Page.

WILLIAM A. WALKER.

City Clerk.

WALTER W. PIKE.

Assistant City Clerk.

EDWARD J. BRANDON.

City Messenger.

FRANCIS L. PRATT.

COMMITTEES OF THE CITY COUNCIL.

Joint Standing Committees.

Accounts. Aldermen Phillips and Buck; Councilmen Ellis, Bachman and Macdonald.

Almshouse. Aldermen Parry and Clary; Councilmen Cheney, Cawley and Baldwin.

Assessors' Department. Alderman Townsend; Councilmen Bachman and Stearns.

City Engineering. Aldermen Townsend and Phillips; Councilmen Winter, Jones and Howe.

Claims. Aldermen Aylward, Buck and Phillips; the President, and Councilmen Howland, Fillmore, Chase, Counihan and Davis.

Finance. The Mayor, and Aldermen Bancroft, Doyle and Phillips; the President, and Councilmen Chase, Howland, Russell, Counihan and Davis.

Fire Department. Aldermen Aylward and Parry; Councilmen Macdonald, Winter and Jones.

Fuel. Aldermen Clary and James; Councilmen Breen, Fillmore and Sutton.

Health. Aldermen Phillips and Buck; Councilmen Seaverns, Baldwin and Cawley.

Lamps. Aldermen Doyle and Parry; Councilmen Counihan, Winter and Howe.

Ordinances. Aldermen Aylward and Townsend; Councilmen Howland, Ellis and Cheney.

Printing. Aldermen Clary and James; Councilmen Russell, Ellis and Seaverns.

Public Instruction. Aldermen Fairbairn and Bancroft; the President, and Councilmen Howland, Seaverns and Baldwin.

Public Property. Aldermen Buck and Fairbairn; Councilmen Stearns, Fillmore and Cheney.

Roads and Bridges. Aldermen Doyle and Townsend; Councilmen Chase, Jones and Breen.

Rules and Orders. Aldermen Clary and Buck; Councilmen Bachman, Baldwin and Seaverns.

Water Supply. Aldermen James and Clary; Councilmen Ellis, Sutton and Cawley.

Standing Committees of the Mayor and Aldermen.

Bonds. Aldermen Parry, Aylward and James.
Claims. Aldermen Aylward, Buck and Phillips.
Fire Department. Aldermen Aylward, Parry and James.
Health. Aldermen Phillips, Buck and Aylward.
Licenses. Aldermen Bancroft, Parry and Aylward.
Police. The Mayor, and Aldermen Parry, Bancroft and Fairbairn.
Roads and Bridges. Aldermen Doyle, Townsend and James.
Sewers. Aldermen Fairbairn, Townsend and James.
Street Railways. Aldermen Doyle, Townsend and James.
Rules and Orders. Aldermen Clary, Fairbairn and Buck.
Elections and Returns. Aldermen Fairbairn, Buck and James.

Special Committee of the Board of Aldermen.

Soldiers' Aid. Aldermen Townsend, Bancroft, Phillips, Fairbairn and Parry.

Special Committees of the City Council.

Harvard Bridge. The Mayor, and Aldermen Townsend, Bancroft and Clary; the President, and Councilmen Macdonald, Bachman, Sutton. Jones and Howe.
Legislative Matters. The Mayor, and Aldermen Bancroft and Doyle; Councilmen Sutton, Howland and Ellis.

Committees of the Common Council.

Bills in the Second Reading. Councilmen Russell, Cawley and Howe.
Elections and Returns. Councilmen Baldwin, Breen and Davis.
Enrolled Ordinances. Councilmen Macdonald, Breen and Stearns.

Clerk of Committees.

John McDuffie.

Auditor of Accounts.

Harry T. Upham.

Treasurer.

William W. Dallinger.

Board of Health.

E. Edwin Spencer, M.D., *City Physician, ex officio.*

(Term, three years. From 1889).

Daniel H. Thurston (appointed 1890.)
William H. Whitney (appointed 1891).

(Term, two years).

Clerk.
John McDuffie.

Health Officer.
Edwin Farnham, M.D.

Surveyors of Highways.

The same persons who compose the Board of Mayor and Aldermen.

Assessors.

Joseph Whittemore (term expires 1891).
Andrew J. Green (term expires 1892).
Joshua G. Gooch (term expires 1893).

(Term, three years.)

Assistant Assessors.

Warren Ivers.
John M. Davis.
Daniel B. Shaughnessy.
John Lennon.
Daniel J. Hayes.

School Committee.

Alpheus B. Alger, Mayor, *ex officio*, *Chairman.*

WARD I.

William T. Piper (term expires 1891).
Ellen A. Goodwin (term expires 1891).
Winfield S. Chaplin (term expires 1893).

WARD II.

Phebe M. Kendall (term expires 1891).
James L. Paine (term expires 1892).
Robert O. Fuller (term expires 1893).

WARD III.

Edmund Walsh (term expires 1891).
Anne Clark Stewart (term expires 1892).
Edward B. Malley (terms expires 1893).

WARD IV.

Caroline L. Edgerly (term expires 1891).
Joseph A. Ball (term expires 1892).
Asa P. Morse (term expires 1893).

WARD V.

Albert M. Barnes (term expires 1891).
William A. Start (term expires 1892).
George A. Allison (term expires 1893).

(Term, three years).

Secretary.

Sanford B. Hubbard.

Superintendent of Schools.

Francis Cogswell.

Overseers of the Poor.

The MAYOR, *ex officio*, *Chairman*.

Stephen Anderson (term expires 1892).
Charles E. Vaughan (term expires 1893).
William W. Burrage (term expires 1894).
Charles Bullock (term expires 1895).
Charles Walker (term expires 1896).

(Term, five years).

Secretary.

David P. Muzzey.

Visitor.

Vespasian Danforth.

Warden of the Almshouse.

Martin L. Eldridge.

Assistant City Physician.

Lewis S. Byrant, M. D.

(Elected in April by the Overseers of the Poor, subject to the approval of the Mayor and Aldermen).

Cambridge Cemetery.

Commissioners.

The MAYOR, *ex officio*, *Chairman*.

Silas B. Buck (term expires 1892).
David Ellis (term expires 1892).
George S. Saunders (term expires 1893).
John F. O'Brien (term expires 1893).
William A. Bertsch (term expires 1894).
Isaac S. Pear (term expires 1894).

(Term, three years.)

Superintendent.

Charles S. Childs.

Trustees of the Cambridge Public Library.

Hon. Henry H. Gilmore, *President.*

Alderman.	*Common Council.*	*School Committee.*
John R. Fairbairn.	Edward C. Wheeler.	Albert M. Barnes.

Citizens at Large.

Samuel L. Montague (term expires 1892).
Thomas W. Higginson (term expires 1892).
Oliver H. Durrell (term expires 1893).
Henry H. Gilmore (term expires 1893).
John H. H. McNamee (term expires 1894).
Alvin F. Sortwell (term expires 1894).

Librarian.	*Secretary.*
Almira L. Hayward.	Oliver H. Durrell.

Cambridge Water Board.

The MAYOR, and President of the Common Council, *ex officiis.*

James M. W. Hall (term expires 1891).
Chester W. Kingsley, *President* (term expires 1892).
Leander M. Hannum (term expires 1893).
John F. O'Brien (term expires 1894).
George H. Howard (term expires 1895).

(Term, five years).

Clerk.

Walter H. Harding.

Superintendent of Water Works.

Hiram Nevons.

Pumping Engineer.

Edwin C. Brooks.

Water Registrar.

Walter H. Harding.

Trustees of Sinking Fund of Water Loan.

The MAYOR, City Treasurer, and President of the Common Council, *ex officiis.*

Commissioners on Sinking Funds of the City.

Charles H. Saunders (term expires 1892).
Frank A. Allen (term expires 1892).
John C. Bullard (term expires 1893).
George H. Howard (term expires 1893).
Joseph A. Holmes (term expires 1894).
Andrew J. Lovell (term expires 1894).

(Term, three years).

Trustees of the Sanders Temperance Fund.

The MAYOR, and President of the Common Council, *ex officiis*.

Alderman.	*Common Council.*
William A. Bancroft.	J. Henry Russell.
	Andrew J. Jones.

Trustees of the Bridge Charitable Fund.

The MAYOR, and President of the Common Council, *ex officiis*.

Alderman.

John E. Parry.

Trustees of the Dowse Institute.

The MAYOR, and President of the Common Council, *ex officiis*.

William W. Wellington. Willard A. Bullard.
Frank A. Allen.

Senators in General Court.

Horace G. Kemp.
Third Middlesex District, Wards 1, 2, 4, 5.

John W. Coveney.
Third Suffolk District, Ward 3.

Representatives in General Court.

Isaac McLean. Stephen Anderson.
Archibald M. Howe. Charles W. Henderson.
Andrew J. Rady. Malcolm E. Rideout.
Elmer H. Bright.

Registrars of Voters.

John W. Coveney (term expires May 1, 1892).
Horace K. Osborn, *Clerk* (term expires May 1, 1893).
Isaac Bradford, *Chairman* (term expires May 1, 1894).
James Cox (term expires May 1, 1895).

One appointed annually, in March or April, to hold office four years.

Third District Court of Eastern Middlesex.

Standing Justice.

Chester F. Sanger.

Special Justices.

Samuel W. McDaniel. Jabez Fox.

Clerk.

Emerson W. Law.

City Solicitor.

Charles J. McIntire.

City Engineer.

Lewis M. Hastings.

Superintendent of Sewers.

Theodore L. Pike.

Inspector of Wires.

Charles H. Morse.

Commissioner on West Boston, Craigie's, and Prison Point Bridges.

William J. Marvin.

Harbor Master.

William J. Marvin.

Superintendent of Streets.

Edgar H. Reed.

Superintendent of Public Buildings.

Benjamin H. Steele.

Superintendent of Lamps.

B. Otis Danforth.

Board of Engineers.

Chief Engineer.

Thomas J. Casey.

Assistant Engineers.

First Assistant . . . . . Nathaniel W. Bunker.
Second Assistant . . . . . Charles W. Brackett.
Third Assistant . . . . . William B. Cade.

Secretary of the Board.

Nathaniel W. Bunker.

Police Department.

Chief of Police.

Lothrop J. Cloyes.

Captains of Police.

District No. 1.	District No. 2.	District No. 3.
Thomas H. Lucy.	Mark J. Folsom.	John F. Murray.

Inspector.	*Assistant Inspector.*
Lawrence J. Ducey.	Alonzo S. Harriman.

Sergeants of Police.

James S. Alexander.
Charles L. Pike.
Frederick B. Pullen.
Andrew Sproul.
William F. Batchelder.
Daniel Callahan.
Dennis Corcoran.
William Mullett.

Policemen.

(With the numbers of their badges.)

No.		No.	
5	Apel, Frederick.	32	Keaney, James M.
51	Aylward, Richard H.	35	Ladd, Fred. L.
7	Barrington, George T.	44	Marston, Charles C.
28	Belcher, Edward F.	55	Maloy, John P.
53	Blen, Elbridge S.	10	McBride, John J.
69	Brennan, Michael J.	30	McCarthy, Jeremiah.
36	Butcher, William H.	27	McCann, Charles J.
15	Coffey, Michael.	26	McElroy, James L.
66	Coghlin, Francis J.	64	McMenimen, William H.
29	Conry, Michael J.	57	McNamee, Hugh J.
20	Corcoran, Timothy.	18	McNulty, James E.
56	Coulter, John.	1	McCrehan, John E.
25	Comerford, Edward J.	43	Murray, James E.
34	Culhane, Michael.	45	Murray, Patrick F.
50	Dynan, Thomas F.	4	Neilon, Michael.
68	Deehan, John W.	60	Nickelson, William.
39	Deehan, William H.	52	Priest, Charles W.
40	Doyle, Patrick.	59	Real, Thomas J.
8	Furbush, Joseph H.	62	Roper, Bernard J.
38	Ginty, Michael A.	70	Robinson, Fred. A.
2	Graves, William H.	46	Scobey, Frank W.
41	Griffith, John J.	6	Shackford, Leonard.
9	Hall, James P.	65	Shaughnessy, John E.
12	Hartnett, Timothy J.	63	Skelley, John W.
14	Higgins, Benj. F.	21	Smyth, George.
49	Hiscock, Simon D.	31	Stetson, Charles H.
47	Hixon, Robert T.	24	Stevens, David A.
22	Hooper, Moses W.	67	Sullivan, Thomas F.
58	Holt, James H. H.	61	Sullivan, Cornelius.
33	Howe, William H. H.	13	Twist, William.
37	Hurley, Patrick J.	42	Wells, John H.
11	Jones, Henry C.	3	White, Orrin B.
19	Joyce, Edward.	54	Wiley, John.
17	Jewett, Dexter.	48	Winslow, John E.

Matrons of Police.

Mrs. E. S. Hains. Mrs. A. M. Stearns.

Policemen without pay (within the Civil Service).

William H. Aberle.
J. L. P. Ackers.
Horace A. Allyn.
Oliver W. Balcom.
Richard Balmer.
John A. Bartlett.
William H. Bates.
Joseph Beaubo.
Edmund R. Blinn.
Charles F. Bowman.
Charles W. Brackett.
John B. Brady.
James T. Brassil.
Timothy J. Breen.
James K. Bresnan.
Ferdinand N. Buffum.
Daniel A. Buckley.
Nathaniel W. Bunker.
William Burgess.
James Burke.
Samuel Busnach.
William B. Cade.
William H. Cairns.
William H. Carroll.
James Carter.
Thomas J. Casey.
Moses M. Child.
Charles S. Childs.
Ambrose H. Clark.
Noah M. Cofran.
John Collier.
Patrick Corcoran.
Daniel F. Counihan.
Vespasian Danforth.
Abner R. Davis.
Daniel K. Dinsmore.
Patrick F. Dunlea.
Martin L. Eldridge.
John E. Fitzgerald.
Luther F. Flemming.
Thomas Flynn.
Oliver G. Fosdick.
William Foster.
James H. Furfey.
James J. Garvin.
Charles A. Gay.
William T. Gibson.
Eli L. Goodrow.
James Grant.
Charles E. Hancock.
Henry L. Hale.
Luther Hapgood.
John L. Harrington.
George H. Hastings.
John A. Hezlitt.
Thomas M. Howard.
Plumer S. Horne.
J. Lewis Howe.
William H. Howe.
William Hunnewell.
Samuel F. Hunt.
Thomas W. Jennings.
Thomas W. Jones.
Frank W. Keaney.
Conrad D. Kinnear.
Joseph P. Kline.
Michael F. Lamb, Jr.
Martin V. Langley.
Frederick W. Law.
William B. Lehmkuhl.
Charles S. Lincoln.
James W. Lovering.
Francis M. Mason.
Jeremiah S. McCabe.
Bernard McCafferty.
Bernard McCaffrey.

John H. McCarty.
Joseph F. McCorry.
John B. McGovern.
Benjamin McKeen.
James McLean.
James McNeill.
George W. Montgomery.
Thomas Montgomery.
William N. Mullins.
Simon J. Mulvaney.
Dennis Murphy.
Michael Murphy.
Nathaniel M. Neal.
Augustus W. Nelson.
Hiram Nevons.
James H. Newman.
Francis A. Osborn.
George A. Parmenter.
Joseph A. Pike.
Francis L. Pratt.
Patrick H. Raymond.
William H. Robertson.
Charles L. Russell.
Charles M. Sanborn.
Joshua S. Sanborn.
John T. Shea.
Andrew G. Smith.
Gideon Smith.
Henry Smith.
James W. Thompson.
Clarence H. Whiting.
James F. Wilkinson.
George Wood.

Policemen (without pay).

John K. Abbott,
Robert Alexander,
Walter J. Anderson,
Archibald Archambeau,
Andrew J. Ayer,
John Banks,
Edwin C. Brooks,
Samuel Carleton,
John I. Carroll,
John Clark,
Patrick Clark,
Frederick Clover,
Joseph Conners,
Richard Conway,
Edward E. Coye,
Patrick Cronin,
Charles W. Dailey,
John M. Day,
Charles O. Dam,
Thomas C. Deehan,
James Doherty,
Rufus S. Downe,
James F. Dunn,
Harry Ellis,
Rudolph Erhardt,
Denis J. Farrell,
Antonio Francis,
Frank Frates,
James E. Furguson,
David Garvin,
Franklin C. Hatch,
James Kelly,
Armon A. Kiner.
George P. Knowlton,
Horace D. Litchfield,
Herbert E. Lombard,
Adam G. Loner,
Kenney C. Lorrell,
L. L. Lyon,
William L. Lyon,
Thomas F. Lyons,
John McFarland,

James Main,
James Mee,
Arthur F. Miller,
Louis Miller,
James A. Mimnaugh,
R. H. Moltman,
Timothy D. Morse,
Patrick Murphy,
William Murphy,
John O'Brien,
John A. O'Connor,
Norman O'Connell,
George R. Oliver,
Robert A. Parry,
Melvin W. Perry,
John J. Printon,
William E. Potter
Anton J. Rice,
Robert Roger,
James C. Scorgie,
Peter Shea,
Alex. F. Shepherd,
Joseph S. Skelton,
George L. Stevens,
Rolly Stovvoll,
Richard W. Sutton,
Albro J. Twombly,
Charles E. Walker,
William P. Wallace,
Frank Ward,
Edgar L. Wentworth,
Wesley Wile.
Jerry J. Long,

Keeper of Lock-ups.

Lothrop J. Cloyes.

Truant Officers.

Moses M. Child. John Collier

Francis M. Mason.

Probation Officer.

Frederick W. Hagar.

Constables.

George T. Barrington.
William F. Batchelder.
Michael S. Busnach.
Lothrop J. Cloyes.
Vespasian Danforth.
John M. Davis.
Lawrence J. Ducey.
John R. Fairbairn.
Thomas T. Ferguson.
Mark J. Folsom.
Joseph Fox.
Charles S. Gilbert.
Alonzo S. Harriman.
Appleton Hubbard.
Warren Ivers.
John Lennon.
Charles S. Lincoln.
P. Allen Lindsey.
John Loughrey.
Thomas H. Lucy.
Frank H. Lull.
Frederick A. Lull.
James I. Murphy.
John F. Murray.
Daniel B. Nash.
James McD. Roy.
Frank E. Shaw.
John W. Skelley.
Warren F. Spalding.
Arthur M. Stewart.

Undertakers.

John W. Coveney.
Thomas Devens.
David Fudge.
Samuel F. Hunt.
George H. Kelley.
Joseph J. Kelley.
Gustavus King.
Horace D. Litchfield.
Judson Litchfield.
C. Henry Lockhart.
Abiel E. Long.
James F. Mullen.
George F. Ricker.
John J. Ross.
William Ross.
James J. Shea.
William A. Taylor.
Benjamin F. Wyeth.
Henry A. Wyeth.

Auctioneers.

William H. Adsit.
John K. Abbott.
Fred W. Brown.
Daniel A. Buckley.
William H. Briggs.
Jeremiah W. Coveney.
John W. Coveney.
Watson G. Cutter.
William R. Ellis.
John R. Fairbairn.
Max Frankenstein.
Leander M. Hannum.
Stephen H. Harrington.
Samuel W. Joel.
John Lennon.
P. Allen Lindsey.
Frederick A. Lull.
James H. McCormick.
John Mahady.
James McD. Roy.
Stephen J. Riley.
Edmund E. Sanborn.
Humphrey L. Snow.
Francis Traynor.
Stephen W. Trowbridge.
Herbert Walker.
Julius D. Whipple.

Fence-Viewers.

George B. Lothrop. Francis H. Stickney. Abel Stevens.

Field-Drivers.

James S. Alexander.
Frederick Apel.
Richard H. Aylward.
George T. Barrington.
William F. Batchelder.
Edward F. Belcher.
Elbridge S. Blen.
Michael J. Brennan.
William A. Butcher.
Daniel Callahan.
Michael Coffee.
Francis J. Coghlin.

Edward J. Comerford.
Michael J. Conry.
Dennis Corcoran.
Timothy Corcoran.
John Coulter.
Michael Culhane.
John W. Deehan.
William H. Deehan.
Patrick Doyle.
Thomas F. Dynan.
Joseph H. Furbush.
Michael A. Ginty.
William H. Graves.
John J. Griffiths.
James P. Hall.
Timothy J. Hartnett.
Benjamin F. Higgins.
Simon D. Hiscock.
Robert T. Hixon.
James H. H. Holt.
William H. H. Howe.
Patrick J. Hurley.
Henry C. Jones.
Edward Joyce.
James M. Keaney.
Frederick L. Ladd.
John P. Maloy.
Charles C. Marston.
John J. McBride
Charles J. McCann.
Jeremiah McCarthy.
John E. McCrehan.
James McElroy.
William H. McMenimen.
Hugh J. McNamee.
James E. McNulty.
William Mullett.
James E. Murray.
Patrick F. Murray.
Michael Neilan.
William Nickelson.
Charles L. Pike.
Charles W. Priest.
Frederick B. Pullen.
Thomas J. Real.
Frederick W. Robinson.
Bernard J. Roper.
Frank W. Scobey.
Leonard Shackford.
John E. Shaughnessy.
John W. Skelley.
George Smyth.
Charles H. Stetson.
David A. Stevens.
Cornelius Sullivan.
Thomas F. Sullivan.
Orrin B. White.
John Wiley.
John H. Wells.

Measurers of Wood and Bark.

Herbert T. Lawrence.
Robert A. Parry.
Joshua S. Sanborn.
Henry B. Sellon.

Pound-Keeper,

Arthur F. Miller.

Fish Officers.

John I. McAvoy. C. Burnside Seagrave.
J. William Mahady.

Hay Weighers.

Thomas Gurnham. Joshua S. Sanborn.
Timothy Sullivan. Henry B. Sellon.

Coal Weighers

Frank E. Bailey. Thomas H. Matthews.
Silas E. Buck. John Moynahan.
Edward E. Coye. John E. A. Mulliken.
Walter F. Grieves. Amos Pettingill,
Fred A. Humiston. Joshua S. Sanborn
Herbert T. Lawrence. Frank H. Tyler.
Charles H. Lealand. Alfred H. Wellington.
Ernest H. Wellington.

Weighers of Boilers and Heavy Machinery.

Joshua S. Sanborn.

Inspectors of Junk Shops, Pawnbrokers' Shop and Second-hand Clothing Stores and Dealers.

Lawrence J. Ducey. Alonzo S. Harriman.
Mark J. Folsom. Thomas H. Lucy.
John F. Murray.

Sealer of Weights and Measures

B. Otis Danforth.

Deputy Sealer.

Conrad D. Kinnear.

Weighers.

Leonard R. Bacon.
Thomas Burns.
Isaac A. Chandler.
James W. Coleman.
John Guiney.
Charles F. Hittinger.
Nathan H. Holbrook.
Henry Hooker.
William Maloney.
Arthur F. Miller.
Alfred Morrill.
George L. Murdock.
Walter H. Murdock.
Robert S. Paine.
John Reardon, Jr.
Joshua S. Sanborn.
James T. Scully.
Thomas H. Shea.
Frank H. Tyler.
Alexander Wight.

Inspector of Milk.

Frank A. Dunbar.

Inspector of Vinegar.

Frank A. Dunbar.

Inspector of Provisions and Animals Intended for Slaughter.

Lothrop J. Cloyes.

Person to Receive Information of Damages Done by Dogs. (Ch. 454, Acts of 1889).

Lothrop J. Cloyes.

Persons to Cause to be Properly Interred the Bodies of Soldiers and Sailors.

Cornelius G. H. Bennink.
John W. Coveney.
William H. Eveleth.
Joseph J. Kelley.

Surveyors of Mechanics' Works.

Charles A. Mason.
John S. Pollard.

Measurer and Surveyor.

Henry L. Hale.

Inspector of Charcoal Baskets.

B. Otis Danforth.

Measurer of Grain.

B. Otis Danforth.

CONTENTS.

	Page.
Mayor's Address	3
Report of Auditor of Accounts	33
Receipts during the year	33
Expenditures	34
City Debt	36
Water Works Debt	36
Funded Debt	39
Funded Water Debt	40
Temporary Loan	41
Sinking Funds	42
Cemetery Fund	43
Trust Funds	43
Taxes	43
Valuations, Polls, Dwellings, and rate of Taxation (for 10 years)	45
Abatement and Discounts (for 10 years)	45
Valuation for 3 years	46
Borrowing Capacity	46
City Liabilities	47
Assets	47
Detailed Statement of Receipts, Expenditures, and Appropriations	48
Transfers	50
Bridge (Harvard)	52
Bridges (West Boston, Craigie's and Prison Point)	53
Cemetery	54
Cambridge Public Library	56
Discount Taxes	57
Engineering	57
Fire Department	58
Health Department	61
Incidental Expenses	61
Interest	67
Lighting Streets	67
Pauper Department (Almshouse)	68
Pauper Department (House Offal)	71
Pauper Department (Outside Aid)	72
Pauper Department (Salary of Assistant City Physician)	74

Page.

RECEIPTS, EXPENDITURES, ETC.—*Continued.*

Police Department 74
Public Property (City Buildings, Care and Repairs) . . . 76
Public Property, Incidentals 79
Public Property, New City Hall (Furnishing) 79
Public Property (New Engine House and Land) 80
Public Property (New High School-House) 81
Public Property (New School-House, Ward 4) 82
Public Property (New Putnam School-House 82
Salaries 83
School Department (Incidental Expenses) 84
School Department (Salaries) 84
School Department (Text-Books and Supplies) 85
School Department, School-Houses (Care and Repairs) . 80
Sewers (Construction) 87
Sewers (Construction, Belmont System) 88
Sewers (Maintenance) 89
Sinking Funds 91
State Aid 91
Stationery and Printing 92
Street Department:
Bridges 93
Sea Wall on Charles River 94
Extension and Widening 93–94
Maintenance and Collecting Ashes 94
Paving 99
Shade Trees and Public Grounds 100
Watering 101
Water Works (Construction) 102
Water Works (Construction, Fresh Pond) 104
Water Works (Construction, Stony Brook) 105
Water Works (Interest on Water Loan) 106
Water Works (Maintenance) 106
Water Works (Abatements) 109
Water Works (Rates, Fines, etc.) 109
Water Works (Rates, Fines, etc., Refunds) 109
Water Works (Sinking Funds) 110
Water Works (Supplies) 110

REAL ESTATE OWNED BY THE CITY AND PROPERTY EXEMPT FROM TAXATION 113–125

REPORT OF COMMITTEE ON ACCOUNTS 126

REPORT OF COMMITTEE ON FINANCE 127

POLLS AND VALUATIONS 132

REPORT OF THE CITY TREASURER 135

REPORT OF COMMISSIONERS OF SINKING FUND OF THE CITY . 138

REPORT OF THE TRUSTEES OF SINKING FUND OF CAMBRIDGE WATER WORKS 144

Page.

Report of Trustees of Dowse Institute 147
Report of Trustees of Bridge Charitable Fund . . . 149
Report of Trustees of Sanders Temperance Fund . . 150
Report of Sanders Temperance Fund Missionary . . . 151
Report of Overseers of the Poor 153
Report of the Superintendent of the Almshouse 161
Report of the Assistant City Physician 170
Report of City Clerk (Fees) 173
Report of City Treasurer (Fees) 174
Report of City Messenger 175
Report of Trustees of the Cambridge Public Library . 176
Report of the Librarian 181
Report of Committee on Public Property 191
Report of the Superintendent of Public Buildings . . 213
Report of the Inspector of Buildings 226
Report of the Committee on Soldiers' Aid 229
Report of Commissioners of the Cemetery 230
Report of City Engineer 233
Bridges 234
Streets 236
Sewers 237
Water Works 244
Report of Superintendent of Sewers 242
Report of Superintendent of Streets 248
Report of Bridge Commissioner 260
Report of Water Board 264
Report of the Registrar 274
Reports of Committee on Accounts of Water Board . 279
Report of Superintendent of Water Works 283
Report of the Engineer of the Pumping Station . . . 307
Report of Chief Engineer of the Fire Department . 310
Report of Chief of Police 334
Report of Probation Officer 341
Report of Board of Health 345
Report of Superintendent of Lamps 368
Report of Sealer of Weights and Measures 371
Report of Milk and Vinegar Inspector 374
Report of Inspector of Wires 386
Report of School Committee 388
Valedictory Address of Hon. Henry H. Gilmore . . . 457
Ordinances Passed since the Adoption of the Revised Ordinances of 1889:
Truants 463
Water Works 464
Auditor of Accounts (Salary) 464
Sinking Funds 464
Electric Wires 465

Page.

ORDINANCES—*Concluded.*

Assistant City Physician (Salary) 465
Water Works 465
Accounts and Finance 466
Water Works 466
Junk, etc. 467
Electric Wires 468
Streets 471
Fire Department 471
Streets 472
Electric Wires 473
Amendments to Sundry Ordinances 474
Police Signal Boxes 474
Streets 475
City Clerk (Salary) 476
Assistant City Clerk (Salary) 476
Streets 476
Water Works 476
Water Works 477
Taxes 477
Police Signal Boxes 478
Salaries (Police) 478
Electric Wires 479

MAYORS, 1846–91 481

MUNICIPAL REGISTER 482

7929 11
167